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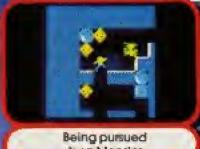




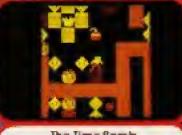
The Screen Editor.



The Character Editor.



by a Monster



The Time Bomb is located



The Poisonous Fungus grows insidiously



Collecting a Golden Crown

Are you ready for the ultimate challenge?

Our original Repton game was immediately acclaimed as a refreshingly new concept; a game requiring dexterity to complete its arcade-style elements, and clear logical thinking to solve its strategic puzzles. Repton involves retrieving treasure from cleverly-constructed traps of falling rocks whilst avoiding the fearsome monsters and haunting spirits. "This is an astounding game reaching new heights in BBC arcade adventures." enthused the Micro User magazine.

Last Christmas saw the release of Repton 2, larger and much more challenging than before. Acorn User's Technical Editor Bruce Smith wrote: "Repton 2 is better than anything I've played on the BBC Micro or Electron. Brilliant!"

Now, completely rewritten and improved for the Commodore, Amstrad, BBC Micro and Electron, we proudly present Repton 3. For the first time, a screen-designer is included: try to devise screens that will perplex your friends, then see it you can solve their newly-designed screens. Another Innovation is the character-designer which enables you to design your own monsters, rocks, eggs, spirits, diamonds . . . any or all of the game's characters can be redefined as you wish.

Repton 3 is much larger than its predecessors — if has 24 lascinating screens, and players who are skilful enough to complete them all can enter our prize competition described below. All the lavourite Repton characters have been retained, together with several new leatures: a creeping paisonous lungus which grows at an alarming rate; time bombs and time capsules (for puzzles in the 4th dimension); and golden crowns as well-deserved rewards for your endeavours. Can YOU complete Repton 3?

PRIZE COMPETITION

If you complete Repton 3, you can enter our competition. Prizes include over £200 in cash, with T-shirts, mugs, badges and pens for runners-up.

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News

All that's new in the ever-expanding world of the Electron.

Wordwise Plus

The top selling word processor for the BBC Micro is now available for the Electron. We give it a thorough workout.

Software Surgery

Our panel of experts has been busy over the past few weeks: Five text adventures, two arcade games and a colourful educational pack are reviewed. 14

Awari

Play your Electron or play against a friend with this classic board game from Africa.

View Tutorial

We kick off a great new series with the first in a three-part article on word processing using View. 24

Graphics

We continue our series with the absolute truth about relative coordinates. 27

Competition

Over £500 of Audiogenic software to be won in this easy-to-enter contest. 29



Super Boss

Be a manager of a top soccer team and try for the league and FA cups in this exciting football management simulation



Adventures

Pendragon provides a host of tips, clues and magic spells for those adventurers stuck in The Ferryman Awaits.



Basics

Our down to earth series for beginners looks at a REMarkable command that does nothing at all, yet is extremely useful!

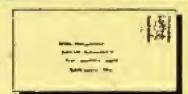
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Need a burglar alarm? Want to know if the cat is in or out? We show you how in the third part of our series on expanding your Electron. 40



Two short, yet most impressive listings from our clever readers.



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Published by Database Publications Ltd Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.

Telephone: 061-456 8835 (Editorial) 061-456 8383 (Administration) 061-456 8500 (Advertising)

Subscriptions: 081-480 0171. Telecom Gold Mailbor 72:MAG001. Prestel: 614568383. Teles 265871 MON9EF G. Quoting Ref 72:MAG001

ABC 37,575 January-June 1986

News trade distribution: Diamond-Europress Sales and Distribution, Unit 1, Burgess Road, lyyhouse Lane, Hastings, East Sussey TN35 4NR, Tel: 0424 430422.

Printed by Carlisle Web Offset.

Electron User is an independent publication Acorn Computers Ltd. manufacturers of the Electron, are not responsible for any of the articles in this issue or for any of the opinions expressed Electron User welcomes program listings and articles for publication. Material should be typed or computer-printed, and preferably double-spaced. Program listings should be accompanied by cassette tape or disc. Please enclose a stamped, self-addressed envelope, otherwise the return of material cannot be guaranteed. Contributions accepted for publication will be on an all-rights basis.

Subscription rates for 12 issues, post free:

£12 UK & Eve (Sterling only) £20 Europe £35 Overages

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ACORN has given the green light for production to start on the Plus 1, the main expansion unit for the Electron.

It is now to be made under licence by Surrey-based Advanced Computer Products, a leading manufacturer of peripherals.

And the company hopes to be able to bring it to market for less than £50. It was originally sold for £69.

The move is being seen as providing a fresh lease of life for the Electron and its 250,000-strong user base.

For Acorn stopped manufacturing the Plus 1 back in November, 1985, with supplies effectively drying up one year later.

Demand

In all some 49,000 Plus 1s came off the production line before the company decided to call a halt.

At the time this was viewed by many as Acorn effectively withdrawing its support from the Electron.

However demand for the product, which enables the machine to run everything

Plus 1 going back into production

from a joystick to a printer, has become overwhelming of late.

"We've had a tremendous increase in calls from customers who need the Plus 1 as a means of using our own Electron products", says John Huddlestone of ACP.

"In fact at the beginning of the year our phones were completely blocked with people wanting the Plus 1".

As part of the licensing agreement with Acorn, ACP now has access to all the Plus 1 tools and moulding equipment.

It also means that ACP will now accept responsibility for providing a one-year warranty for the Plus 1.

"We believe there is still a

huge market out there for the unit", says John Huddle-

"After all, this was the interface that effectively transformed the Electron from a toy into a useful machine.

Sales

"It will mean that a lot of machines that have found their way into the attic after people got fed up playing games with them can now be dusted off and put to some real use".

Nor does ACP anticipate sales of the Plus 1 being limited to the UK.

"We expect to sell them abroad as well, particlarly to Holland", he said.

Say it in Greek

A SERIES of fonts for use with its Wordpower word processor has been released for the Electron by lan Copestake Software.

Power Fonts allow full control over extra characters for foreign languages and scientific symbols.

The series covers Cyrillic and Greek alphabets, physics and astronomy. Each costs £24.50.

Also available is PowerFont NTQ, a special version of the Permanent Memory Systems package Multi-Font NTQ.

Price £35.25.

RUSH TO MEET THE SHOW DEADLINE

A TEAM at Advanced Computer Products is working against the clock to get the new Plus 1s ready in time for this month's Electron & BBC Micro User Show.

"We are pulling out all stops to get them there", said John Huddlestone of ACP, "for the restart of production of these interfaces is an event of major importance to the Electron market.

"And what better place to unveil them than at the northern showcase for Acorn products".

All the signs point to the show attracting a record

number of visitors and new products alike.

The event, which takes place at the Renold Building, UMIST, Manchester, on March 20, 21 and 22, is the 15th in a series which started way back in 1983.

All the evidence of the Electron's new and powerful role in home computing can be seen at UMIST where more than 70 exhibitors will be offering their latest add-ons and software.

Advanced Computer Products has also selected the event to unveil a 250k ram cartridge which plugs directly into the Electron's cartridge port or conventional user port.

In the entertainment sector Tynesoft will be launching its latest sport simulation for the Electron, boxing game Big K.O., price £7.95 on tape, £12.95 on disc.

Shards Software has converted its range of adventures to run on the Electron. The single disc compendium contains Operation Safras, Woodbury End, Pettigrew's Diary, Mystery of the Java Star and Galilee.

Micro Media Computer Supplies is launching a range of copyholders which includes an A3 version for books and magazines and a desktop model. Prices from £12 to £40.

The show will again feature the popular Acorn Theatre where leading micro experts will offer information and advice about the latest peripherals and software releases.

The Renold Building will be open from 10am to 6pm Friday and Saturday and from 10am to 4pm on Sunday.

A money-saving advance ticket order form appears on Page 13.

Software house picks Electron

TWO years ago when Geoff Larsen went shopping for a better micro than his ZX-Spectrum he had the Sinclair QL very much in mind.

"I was surprised to find that the Electron – which I hadn't previously considered – totally won me over", he recalls.

"Two years on I'm still as completely satisfied and impressed with the service my Electron has provided as I was the first day I got it".

That trusty micro has now become the foundation stone of a new software house dedicated to producing top class adventure games for Electron users.

Trading as Larsoft, Geoff has released three programs – The Rising of Salandra, Wychwood and The Nine Dancers – that have been praised by leading reviewers

like Electron User's Merlin and Pendragon.

As a result of the warm reception for his first efforts, Geoff is working on more entertainment software for the Electron.

He told Electron User: "Being keen on crosswords it was natural that adventure games should interest me.

"But I found that many relied too much on the use of magic words and illogical situations which tend to distract.

"The whole point of Larsoft games is that all the puzzles have totally logical solutions, they shun pointless violence and are aimed at both sexes.

"Not unlike the artist who conceals a mouse somewhere within his paintings, I enjoy concealing certain references - including



Geoff Larsen: 'Electron won me over'

acknowledgement to The Quill - in each adventure game I write.

"Adventurers playing my latest games may discover injokes from previous programs.

"I'm currently working on a new adventure called The Puppet Man and I already have an idea for a possible follow-up to that one too".

The Rising of Salandra costs £4.95, Wychwood and The Nine Dancers cost £3.95 each.

Comms packages launched

SOFTWARE developer George Rawlins believes the Electron with a Plus 1 makes "an extremely versatile micro which is ideal for communications purposes".

And as boss of Andyk he has just given practical expression to his opinion in the form of two new comms packages for the machine.

Communications Package 1 is designed to allow the user with a little programming ability to set up a custom-designed terminal.

It consists of an RS423 interface, eprom cartridge and Computer Concepts' Termi II rom, allowing connections to non-Prestel type systems like MicroLink.

Communications Package 2 for the serious user can be used as a VT100 terminal for low-cost interfacing with mainframe computers.

Rawlins is also developing the Electron to interface with the Red Box home security and domestic appliance control package from General Information Systems.

"I am also working on a new user port to be launched with an eprom programmer designed specifically for the Electron", he told Electron User.

"The programmer will program 8k and 16k eproms using a fast method.

"The on-board control program will be menu-driven and allow files to be programmed into an eprom".

Be a TV producer

A PROGRAM that lets Electron users produce their own TV shows has been released by Squirrel Software.

Users provide their own sound track, usually from a cassette player. When this and the computer video output are routed to a video recorder the result is a stand alone video that can be shown on a TV set.

There are two main programs, one being Picture Maker for building images which can be used in the video programme and the other called TV Studio which has two separate areas.

The first is Gallery which has eight preview monitors covering a possible 80 pictures.

The second is Program Review which allows the user to see the programme outside the Gallery.

Camera sequences and picture sources can be stored on tape and viewed at any time, with or without a video recorder, Price £11.65.



Soccer on Electron

LATEST release from CDS is a version of its bestselling football simulation for the Electron.

The game has followed its predecessors by shooting straight into the software charts and a spokesman for the company told Electron User: "We expect the game to follow in the footsteps of

Colossus Chess",

Brian Clough's Football Fortunes challenges the user to top the League, win the FA Cup and go as far as possible in European matches.

Also incorporating a board game, the program was written with plenty of advice from Brian Clough himself. Price £14.95

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Included in the package are two superb programs.

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ICON DESIGNER is an invaluable program for creating and storing icons for use in your OWN programs.

The ACR/AMX mouse package may be used on an ELECTRON fitted with a PLUS I & AP5. The 'ART' software is supplied on cassette but can be transferred to DISC (DFS not ADFS)

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A.R.A. 1 (02) /E/£10.35 "A top-class toolkii - I have no hesitation m The best ROM cartridge is by far the A.C.P. £1 5% DFS .. £2 3% ADFS} recommending it Appril User Nov 86) A.R.A.2" A&B Computing (16K EPROM & FULL MANUAL) ADVANCED ROM MANAGER ADVANCED ÉLÉCTRON DES ADVANCED DISC INVESTIGATOR (07)/M/B/E/C/ £24.15 (05) /E/ (06) /M/B/E/C/ A friendly utility for ROM & sideways RAM. Electron & Plus 3 users ... gain 880 A very powerful Disc utility for standard & Examine ROM/RAMs, load tiles into RAM, compatibility by adding the Advanced non-standard discs. Backup most protected move memory to/from SWays ROM/RAM. Flactron DFS (1770 DFS) this is the same disc discs, edit any type of non-standard disc. catalogue/kill AOMS, offer commands to check & repair faulty tracks, create new disc filing system supplied with the BBC B+. Now specific ROMS, save ROMs to disc/tape, formats, copy 40track discs to 80track discs. you can produce and access (compatible) BBC AUTOROM a tile (inc. BASIC) to run from verify two non-standard discs. disc based software. A.C.P. also supplies 51/4." SWays ROM/RAM, execute specific ("ADI features an extremely comprehensive disc drives to add to your Plus 3 (inc. 2nd. machine code subroutine in a ROM, generate sector editor, and one of the finest I've seen" drive adaptor). "ACP has produced another ... Tublink on Prestell a ROM's checksum & CRC superb ROM for the Electron"... Electron User (supplied on 16K EPROM + manual) *Representing amazing value for money. Go Feb '85 out and buy this real bargain." E.U Dec '86 (supplied on 16K EPROM + DFS MANUAL) **ADVANCED 1770 DFS ADVANCED PLUS 4 ADVANCED PLUS 5** 3 versions ADM (11) - ADB (12) (08) /E+1/ (09) /E-1/ £66.70 ADE (13) "Disc drive compatibility at long last" ... Electron User June '86. "The AP4 should be A triple interface cartridge providing. ACP have totally re-written the Acom 1770 1) a TUBE I/face allowing a second processor DFS, enhancing existing features & adding considered the standard interface for the to be connected, increasing BOTH speed & new ones. The result is probably the lastest & Electron" ... Acom User July '86. This sums up AP4 & ACP's approach to producing memory (PAGE 6800 HIMEM 68000 in all most powerful disc filing system your computer could have. With the ability to medes) products. AP4 is a fully ACORN compatible operate in double density occupying both sides of the disc (640K). Automatic file 2) a 1 MHz BUS for control applications & disc l/face & will accept any standard drive prominers inc. PSU, runs 1770 DF5 (as fitted in the 8+ relocation, improved file handling, 62 file catalogue and Sways RAM can be used as a & Masterl, keeps page &EDO, utils in ROM & 3) the USER PORT for mouse and graphic provides a spare rom socket. "ACP:s Plus 4 devices. fast PAM DISC comes out on top. I can recommend it to Also contains 2/3 ROM sockets and on board "An excellent buy for users with a 1770 Disc anyone ... Electron User, June '86. operating software for 2nd processor. controller M.U Dec'88 AP4 packages + D/Drive, AP4 100/AP4 400 ADVANCED ELECTRON DES Ess *OTHER PRODUCTS & SPECIAL OFFERS* £19.99 (14) /E+ASB/ An alternative to our AED(05) for Plus 3 and ASR users. This optional alternative DFS is (101) /E+1/ 112.95 /M/B/E/ £24.00 31/3" discs 10/1/box(120) ViEW cartridge designed for use in Sideways RAM (ASR) and 51/4" discs ds/dd "(121) (102) /E+1/ £12.95 /M/B/E/ £12.99 allows the user to operate a disc filing system VIEW & VSHEET (119) /E+1/ £19.00 5½" discs ss/sd (122) /M/8/E/ [8.99 &Eqq when using the Plus 3 (in ADFS page 31/4" disc drives £129.00 USP cartridge (103) /E+1/ € 9.99 [125] would normally be \$1000). The DFS is simply loaded using the software supplied with the ASR from disc. "I thought the 1770 DFS was E159.00 E/Adv User Guide(104) /E/ £ 3.95 51/4" disc drives 1126) £39.95 2nd. Drive Adaptor(130) /E+3/ € 7.95 1E1 LOGO cartridge (106) PASCAL cartridge (107) C39.95 € 2.95 /E/ 31/3" library box10 (124) superb but the E00 DFS is even better! I can (131) VIEW pack 88C (118) /B/ £49 00 **16K EPROMS** € 3.76 recommend it to all Plus 3 owners," Electron £199.00 /E+1/ (117) /M/8/(e) £57.95 User, Feb '87. AP4 100 (140) VIEWSTORE £229.00 AP4 400 (141)作+1/ (3 场" ADFS disc + manual) £125.00 AP5+ Mouse (143) /E+1/ /C/= Compact /B/=BBC /E/=Electron /E+1/=Electron + Plus 1Equipment codes /M/ = Master TOTAL 0 QTY PRODUCT (PRODUCT No) Please sand order to Advanced Computer Products Ltd. NAME § Ava House, High Street CHOSHAM, Surrey, England GD24 BLZ Tel 0276 76545 (mail order only) All prices include UK delivery and VAT. POSTCODE TEL. I enclose payment for £ fin event of any query . CREDIT CARD No. (Rel E22) please include your (el. rio.)

Wordwise Plus

WORDWISE by Computer Concepts was the very first word processor that appeared for the BBC Micro, and it became the standard.

But when the Electron appeared Wordwise could not be transferred across because there wasn't the facility to plug the rom in – it used Mode 7 for editing and poked the screen directly.

Then two years ago came the next stage – Wordwise Plus, something completely new in word processing.

Now, five years later, Electron users can benefit from this tremendous rom.

The bad news is that you can only use it if you have PMS's E2P-6502 cartridge.

This isn't an eprom, it contains another 6502 microprocessor with its own 64k of ram. E2P is a second processor for the Electron and was itself reviewed in the October 1986 issue of Electron User.

The version of Wordwise Plus you get is a rom image of Hi-Wordwise Plus saved on disc. The Hi means that you get an extra 10k of ram for storing your text.

Why have this set-up? Well, if you have two micro-processors operating to-gether you can split the work in half and run the program almost twice as fast.

So while your Electron looks after the key presses and screen display, the E2P holds the Wordwise Plus program and the text you are typing in.

To start up Hi-Wordwise Plus the E2P must be plugged in and initialised.

Shift+Break boots Hi-Wordwise Plus from disc and you are presented with the Mode 6 main menu screen shown in Figure I.

Press the key number of the option required, or press

STEVE TURNBULL enthuses over this powerful word processor, now available on disc for the Electron

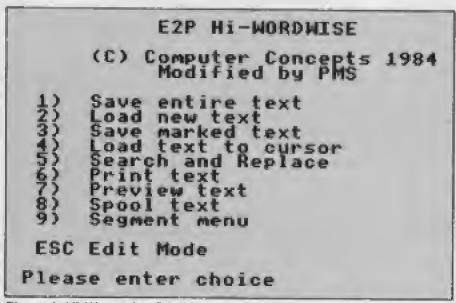


Figure I: Hi-Wordwise Plus main menu

Escape to take you to the main screen for editing your text. You can also press * for a system commander or : for a special Wordwise Plus command.

There is a moment's delay when you switch to edit mode while the program brings up its edit screen.

Wordwise Plus keeps the main menu screen and the edit screen as separate ram areas and swaps them over.

Once in edit mode you can start typing. The text occupies most of the screen, with the beginning and end of text marked with START and END in black on white.

At the top of the screen is one line which, from left to right, gives a word count, a free character count – more than 42000 bytes or roughly six A4 pages of solid text – and I for insert or O for overwrite. Figure II shows a typical screen.

As you type the letters appear on the screen almost immediately, but there is a very slight delay because if you hold down a single key and allow it to auto-repeat the screen display cannot quite keep up.

There is automatic wordwrap, which means that if a word runs over the right hand edge of the screen the whole word is moved to the next line so avoiding a split.

This essential feature can be switched off and on with Ctrl+F:

Moving around the text is simple using the cursor keys to move left, right, up and down by a single line or character.

For larger jumps you use other keys with the Func key. This seems a slightly odd arrangement but you soon get used to it.

As you can see from Figure II, Wordwise Plus is not WYSIWYG - What You See Is What You Get - so you have to format the text for output using embedded commands.

These are typed into the text and processed as the text is printed.

Each embedded command must be preceeded by a G code selected with Func+1 and terminated by a W code selected with Func+2.

You can see one in the second paragraph of Figure II. The command is LS2, standing for "line space 2", which inserts a blank line between each printed line.

Embedded commands are used to control left margin, line length, page length, indentation and so on. Other

This is the main editing screen. As you can see Wordwise Plus is not a WYSIWYG word processor.

This is an embedded command ALSO which will cause all further output to the printer to be double spaced. The markers are placed by pressing Funo+1 and Func+2.

Harkers can be placed by pressing Funo+1 and Func+3. This is a marked block of text. It can be moved, deleted, saved, spooled and printed.

The top line of the screen shows the number of words, memory free, overwrite/insert status and markers.

Figure II: A typical edit screen

Review

commands can be used to send operating system commands during print out, get additional text from files, print numbers and calculations within a line and even execute segment programs – see later about segment programs.

Func+0 switches between insert and overwrite mode when typing data in, this changes the I letter on the top right of the edit screen.

Pressing Func+3 sets a marker in the text, and puts a block in the top right corner of the edit screen. Markers are used to indicate the beginning and end of a piece of text. After text has been so marked you can do things to just that marked section – delete it, move it somewhere else in the text, save it and so on.

Func+4 waits for you to press another character, then moves the cursor to where it next appears in the text. If it can't find the character the cursor ends up at the end of the text, which can be very annoying.

Func+5 also waits for another character and then counts the words up to that character – not a particularly useful operation.

Func+6 waits for a character and then deletes all the text up to that character – a very dangerous option if you aren't careful.

The final three function keys, 7, 8 and 9, are all used with a marked section of text.

Func+7 deletes the text between the markers, Func+8 moves the text between the markers to wherever the cursor key has been positioned and Func+9 copies the marked text to the cursor, leaving the original text and markers in place.

Pressing the Escape key when you are in edit mode takes you back to the menu.

The first two options on the main menu save and load text, but Wordwise Plus is careful to make sure you don't make mistakes.

When you save text it gives you the name of the file you loaded (if any) which you can copy and if you do save under the same

Clear the screen Cls Cursor at <expr>> Move cursor to position in line Cursor left <expr> Cursor right <expr> Cursor up <expr> Cursor down <expr> Cursor top **Cursor** bottom Delete character(s) at the Delete at <expr> cursor Delete character(s) Delete left <expr> backwards Delete marked text Delete marked <expr> Remove the markers Delete markers <expr> Delete word(s) at cursor Delete word <expr>> Delete text Delete text in selected area Show the currently Display selected text area on scréen Endproc End of procedure Find <Sexpr> Move cursor to the beginning of the next occurrence of the string Proc <label name> Call a procedure Loop Repeat ... until <expr> Replace next occurrence Replace <\$expr>,<\$expr> of first string with the next Select the main text area Select text Select one of the seg-Select segment <expr> ments Puts string into the text Type <\$expr> area selected Means a number expres-<expr>> sion, for example, 5 or 3+N%. Means a string expres-<\$expr> sion, such as "hello" or CHR\$(55+Z%). Means any name, such as <label name> input, skip5, test13b and so on.

Table I: Some keywords

name it asks you if you want to overwrite the previous file, and aborts if you don't.

When you select the load option it checks if there is any text in memory, and if so makes sure you really want to load.

I would have preferred if it took notice of whether you had edited the text in memory or not, so that you could keep loading different files without having the annoying beep and the "Are you sure? (Y/N)" coming up every time.

It should only check if you wanted to load new text over the top of text which you had edited but hadn't saved.

You can mark a piece of text when in edit mode and option three allows you to save that section only.

Option four lets you join text files together by inserting the new text file at the cursor position in your text.

Search and replace option five - works in two ways.

Take the global option and every time the search string is found it is replaced by the replace string.

If you opt for the selective mode, each time the search string is found you are asked whether you want to replace it or not.

It allows you to search for Returns, Tabs and the embedded command G and W characters using special codes.

Even handier, you can use the # symbol for a wildcard, which means that if you want to replace every occurrence of the word "Beeb" or "beeb" with "BBC Micro", you can use "#eeb" to match the upper or lower case B.

In the selective mode the computer beeps every time a match is found – an option to turn the noises off would have been nice, although you can use *FX210,1.

The next three options (six, seven and eight) are all variations on the same theme – output.

Option six, Print text, prints the text, or just the marked section.

Option seven, Preview text, displays the text in Mode 0 as it would appear if it were printed, with a long dotted line showing where the page break would be.

And option eight, Spool text, first asks you for a file name, then sends the preview of the text (or marked section) to that file.

One additional choice on the spool option is whether you want any of the printer control codes to be sent to the file as well.

The main menu option nine, Segment Menu, marks the point where Wordwise Plus stops being an ordinary word processor and becomes something completely different – a text processing language interpreter.

Selecting this option takes you to the menu shown in Figure III.

Apart from the main text area for editing, Wordwise Plus possesses 10 other text areas called segments, each of which can contain ordinary text, which means you can edit up to 11 documents at one time, or they can contain segment programs.

A segment program is written using a built-in language which looks a lot like Basic designed to handle text.

Table I gives a list of the



Review

From Page 11

major keywords. By pressing : from a menu you can type immediate commands such as:



which will reset everything, clearing all text and segments.

With segment programs you can create address lists, mail merging, notepads, and spelling checkers limited only by your imagination. You have 26 integer variables, A% to Z%, and 26 string variables, A\$ to Z\$, although there is limited string space of only about 435 bytes.

The true power of the segment programs lies in extending the utilities available when you are word processing.

To run the program that is in segment zero you press Func+A, for the program in segment one Func+B, and so on. This means that each segment program is available from edit mode.

A frequent word processing error is to type two letters in the wrong order, like this:

Happy Birthday

You could change this every time you make the mistake but this takes quite

```
SEGMENT MENU

(C) Computer Concepts 1984
Modified by PMS

1) Save segment
2) Load segment
3) Save marked text
4) Load text to cursor
5) Select segment (8)
6) Print segment
7) Preview segment
8) Delete segment
9) Main menu

ESC Edit Mode

Please enter choice_
```

Figure III: Segment menu

```
REM ** Char Swap **
SELECT TEXT
AS=GCTS
DELETE LEFT
CURSOR RIGHT
TYPE AS
DISPLAT
```

Listing I: Character swap segment program

a few key presses.

Look at Listing I, a segment program to make the transposition for you.

You place the cursor on the first of the misplaced letters and press Func+A (assuming the program is in segment zero).

Whenever you write a segment program the first thing you must do is SELECT the area of memory that the commands are going to affect, in this case the TEXT area.

The first character to be

swapped is read into the variable A\$ with the GCTS function (Get Character from Text).

This function also moves the cursor one place on and the character just read is DELETEd.

The cursor is moved right one character and the character in AS is TYPEd in at the current cursor position and the screen displayed.

Note that you have to DISPLAY the screen otherwise nothing happens on screen until you press the next key.

Listing II shows a more complex segment program to perform the search and replace option which demonstrates loops and jumping within the segment.

Because segment programs are available from edit mode you don't have to go to the main menu to search and replace.

The other use of segments is to hold data, Listing III shows a segment to find all the different words used in a piece of text, placed in alphabetical order, storing all the words in segment 9.

I hope I have been able to prompt your interest in this very flexible and powerful word processor with its unique text handling capabilities. For serious word processing this is definitely the best buy.

```
Product: Wordwise Plus
Price: £39.95
Supplier: Permanent Mem-
ory Systems, 38 Mount
Cameron Orive, St.
Leonards, East Kilbride,
G74.2ES
```

```
TYPE "" 1 N'
 SELECT TEXT
 CUASOR TOP
 REPEAT
 PROC gezword
 IF EOT THEN GOTO quit
 PROC insert
 SELECT VERT
 . quit
 UNTIL EDT
 SELECT SEGNENT 9
 DISPEAT
Y507
END
 -getword
 SECECT TEXT
 PROC akips
 IF EOT THEN EMPROC
 BSHAS
 REPEAT
  PROE getch
  If AT THEN OS=BS+AS
  UNTIL AXPEALSE
 ENDPROC
.skips
 REPEAT
  PROC getch
  UNTEL AX
 EMPPROC
.getch
 ZZ=ASC GCTS
 A3=(2%>64AND2%<91)GR(2%>96
 AND21<123)
 ASECHRS 21
 ENDPROS
.insert
 SELECT SEGMENT 9
 CURSOR TOP
FX=FALSE
BI=ASC BS
IF SIKE ASC GCTS THEN GOTO
 skip
REPEAT
 CURSOR LEFT
 CURSOR DOWN
 UNTIL BY <= ASC GOTS
CUESOR UP
gise.
CURSON EEFT
REPEAT
 CS=GLT5
 Je BS=CS THEN GOTO exit
 IF BS>ES THER GOTO LOOP
 CURSOR UP
 TYPE BSE'IR'
.exit
 FRETRUE
, Loop
 UNTSI FS
DISPLAY
EMOPROC
```

REM ** Word Compiler **

SELECT SEGMENT 9

DELETE TEXT

Listing III: Word compiler segment program

```
REM ** Search & Replace **
                                    7 204
TLS
                                    ASECKRECASE GEKS AND $56)
PRINT'Search and Replace"
                                    IF AS< "Y" THEN GOTO skip
PRINTGlobal or Selective (G/S);
                                   CURSOR LEFT
SELECT TEXT
                                   REPLACE SS, RS
AS=CHRSCASC GCKS AND &5F)
                                   CURSOR RIGHT
UNTIL ASF'G' OR AS='S"
                                   GOTO selet
PRENT AS
TYPE "G++>"
                                   global
PRINT
                                   FIND SE
PRINT'Search string?"
                                   IF EOT THEN SOTO and loop
$$=GLK$
                                   CUASOR LEFT
PRINT
                                   REPEACE SS.RS
PRINTReplace string?"
                                   CURSOR RIGHT
RS=GLK$
                                   6010 global
PRINT
IF AS="6" THEN GOTO global
                                   .endloop
                                   CURSON TOP
                                   FIND "GHPS"
FIND SS
                                   DELETE AT 4
of EOT THEN GOTO endloop
GISPLAY
                                  DISPLAT
```

Two shows Electron

users shouldn't miss

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BBC MICRO

8-10

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Access Visa

5/gned

Administer at deer: PHONE ONDERS: Ring Show Hotton: 061-480 0171

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Willy jets on

Program: Jet Set Willy II

Price: £7.95

Supplier: Tynesoft, Addison Industrial Estate, Blaydon, Tyne & Wear NE21

Tel: 091 414 4611

WILLY first appeared on our screens in Manic Miner after which he evidently spent his profits on the mansion which featured in Jet Set Willy.

It appears that Willy has been having a lot of building alterations, since the mansion now has over 100 new rooms.

This doesn't seem to please Maria the housekeeper who is most insistent that Willy should tidy up after the builders.

She is preventing our hero from reaching the master bedroom until her bidding is done, and has also set a time limit of midnight so it's a race against the clock.

Under your control the poor chap will do his best, but you'll encounter the most amazing assortment of nasties, ranging from mutant camels to something that looks like a refugee from a Happy Eater restaurant.

The fun starts off in the bathroom where all you have to contend with is a killer bath sponge, a dodgy toilet lid and some joker who keeps firing arrows across the screen.

The rooms themselves all have names, ranging from the conventional Butler's Pantry to the bizarre Fallout Shelter.

And whoever heard of a room called Ethel the Aardvark? So far I've conquered about 25 of these rooms but as in real life the Wine Cellar is my ruin every time.

Willy is free to wander from room to room but will only score points when objects are collected, usually at great risk.

One plus point is that to make Willy jump you use the asterisk key - it's nice to see Return getting a rest.

A minus point is that although Willy receives a generous number of lives he is reincarnated at exactly the same place he died. So if the noxious nasty is still there another life is lost immediately, and again, if you're not quick.

Unfortunately, first impressions of this game are not favourable. The title



screen is unimaginative, the sound is non-existent and the graphics poor in comparison to recent bestsellers.

So why do I find myself still playing it at midnight? The reason is the author, Chris Robson, has made each screen a separate series of puzzles for which a solution is often obscure.

The result is a game which is extremely addictive.

I must go now as I think I've just worked out how to get across Willy's Bird Bath.

Beejay

Sound 6	
Graphics	
Playability 9	
Value 8	
Overall8	

Enthusiasm pays off

Program: Adventure 4 Pack

Price: £5.95

Supplier: Potter Programs, 7 Warren Close, Sandhurst, Camberley, Surrey

GU17 8JR Tel: 0252 877608

WHENEVER I see compilation tapes at bargain prices I am always a little worried about the quality of the software.

I was especially concerned in this instance when I discovered that each adventure had been written by an enthusiastic amateur.

But my prejudice proved ill-founded as I soon found that Adventure 4 Pack is a smashing collection of text-only adventures.

Philosopher's Stone, written by Graham Barlow, opens side one.

It employs a very clever loading screen and an excellent choice between normal Mode 4 text or a mystical re-defined script.

You take the role of Daverick Harpmoon on a quest to find the philosopher's stone, a rare substance which will change base metals into gold and produce an elixir of life.

You will soon find that the forest is a series of dead ends – but you will also come across a kleptomaniac pixie who is guarding a dog's dinner.

The second adventure is Hexagram of Trutania Valley, which I have to admit is my favourite of the four.

It is written by Michael Winter and Simon Clifford and involves a search to find six coloured triangles which together make up a hexagram.

You begin your task in a town centre but after a few moves you find yourself walking through fields of turnips, oats and barley.

The exit descriptions are excellent and remind me of the Level 9 style of writing.

You need to read these descriptions carefully to discover some poison and meat which can be used to kill the lion that guards the first triangle.

Inner Space is an anonymouslywritten adventure which is quite mystic and off-the-wall in character.

The opening scenario is streets of derelict houses infested with flies which need swatting.

In the back garden of one such house is a ladder to the clouds which is definitely worth climbing.

The opening 30 moves require the seemingly random collection of objects in order to solve equally obscure problems.

The final offering is a Quill-written



adventure titled Stranded on Iloofrax.

Author Matthew O'Donnell informs you that while you're working on a new form of teleport, an experiment in your lab goes terribly wrong and you find yourself transported to the small planet of lloofrax.

This adventure was spoilt for me by some unfortunate errors in the location descriptions but was otherwise an enjoyable romp through a mazeridden planet.

All in all, well worth the money and the best thing Potter has produced to date

Pendragon

Presentation	3
Atmosphere	8
Frustration factor	7
Value for money 1	
Overall	9

Alphabet antics

Program: The Giddy Game Show

Price: £9.95

Supplier: Mirrorsoft, Maxwell House, 74 Worship Street, London EC2A 2EW.

Tel: 01-377 4600

THE Giddy Game Show is a suite of early learning programs based around the characters used in Yorkshire Television's popular series. The principal aim is to get children to recognise the shapes of letters and the sounds they represent.

Program one is an alphabet book with 26 pages - one for each letter. Each page features one of the Giddy Game Show characters (Gorilla, Gus the Professor, or Giddy) plus a picture

of an object.

The name of the object is written in large and well-formed text with the initial letter of the word picked out in a different colour. It looks very impressive - but does nothing that a book can't.

A criticism of this program and the other three is that the programmers forgot that sound is different on the Electron and BBC Micro: Some weird noises result on the Electron.

Game two is a jigsaw puzzle in which the child must assemble letters of the alphabet. Again the visual quality is good and children are led sensibly through a sequence of operations. The reward for success is a screen full of Giddies.

It's a pity the programmers didn't take off the keyboard repeat - that little omission makes it hard for heavy-handed youngsters to control the moving cursor.

Game three requires children to Ily Giddy on his magic wand towards some food that Gorilla wants.

The name of the food is clearly shown and various pictures of food appear with their initial letters.

If the child gets the right food, Gorilla eats the word while the picture vanishes down Giddy's wand. Selecting a wrong food causes Gorilla to growl and frown.

This program is great fun but because the cursor keys are used there is a real danger of pressing

Break in error.

That problem does not occur on the simpler of the two levels as Giddy flies automatically and the child hits the spacebar at the correct food.

The final program is a maze game in which chidren can help to rescue the King who is imprisoned in a castle.

They do this by guiding Princess Galaxzena around the maze past five objects. Some objects begin with for-



bidden letters and these cause the Princess to use up one of her three lives.

The child has to hit the spacebar when the required option is highlighted. Inevitably, youngsters are going to get the wrong options as the highlight moves on.

The whole package is a very attractive set of simple games aimed at children who are learning to read. The niggles I have are minor, and can easily be remedied by a Basic programmer.

One final complaint is that the instructions are barely adequate, but overall, there are a lot of good bytes for your money and I would recommend the program.

Rog Frost

Sound
Graphics 10
Educational value 6
Value for money 6
Overall 7
PASSAGE CONTRACTOR CON

Elite takes off again

Program: Elite

Price: £12.95 (cassette)

Supplier: Superior Software, Regent House, Skinner Lane, Leeds LS7 1AX.

Tel: 0532 459453

HEY! There's a great new game on the market called Elite. You play the role of an interplanetary trader flying a Cobra Mk3 who spends a great deal of time shooting up pirates - what do you mean you've already got a copy?

As a result of the Acornsoft/Superior Software alliance Elite has been

relaunched.

It is now sold in a sturdy plastic case complete with a revamped manual. Not only that, it is cheaper than

Elite is a game which is best categorised under the heading arcade/ strategy.

Using shrewd financial wheeling and dealing you earn money which can be used to improve the standard of your spaceship.

You start the game with a Cobra Mk3 Popular, equipped with a pulse laser, a small cargo bay and very little else.

Following a few nights of hard graft you should have upgraded her to the Ghia version with beam lasers, large cargo bay, docking computer, energy bomb - the list is endless.

You will then be in control of one of the fastest, meanest fighting machines in the galaxy.

Your adventure begins on a space station orbiting the planet Lave.

All planets are given a rating as to how far they have developed technically. You can use this to indicate the probable price of goods -on a low-tech planet furs will be cheap but computers expensive and vice versa for a high-tech planet.

Once you're confident enough you can try your hand at dealing in narcotics when the rewards - and the

dangers - are higher.

Even by today's standards the graphics used in Elite are excellent. Once out in space you enter a world of three-dimensional line drawings, most of which are out to blow you to pieces.

The dogfights are a delight and you'll need every ounce of cunning and skill if you are to survive.



Each kill you make adds to your skill rating. Starting off as "Harmless" you must face many a sleepless night if you are to reach the dizzy heights of the "Elite".

Elite has been off the market for over a year, so it's likely that there are a number of new Electron users out there who don't own a copy of what is quite simply the best game for the Electron.

Jon Revis

Sound	5
Graphics	9
Playability	. 10
Value for money	. 10
Overall	9

lt's a knockout

Program: The Big KO Price: £7.95 (cassette)

Supplier: Tynesoft, Addison Industrial Estate, Blaydon upon Tyne, Tyne &

Wear NE21 4TE. Tel: 091-414 4611

THE noble art of boxing comes to the Electron courtesy of Tynesoft. Trade blows with eight mean opponents on your way to The Big KO.

On loading you are presented with a very comprehensive menu. You can have a one or two player game using either joystick or keyboard.

Options are also there for sound on or off, user-defined keys, load or save the high-score table and load a new boxer.

You have to press three keys to throw a punch - a combination of left/ right, head/body and punch.

Using this system – and a little skill – you can launch a flurry of different blows that will penetrate your opponent's guard.

The graphics used are very large with each boxer one third of the screen in height.

A punch which lands on target is

registered with a thud and a visible response from the other fighter – either a flinch or, in the case of Sippo the clown, a nose which lights up.

Before the bout begins your four punches are listed in order of power, so too are those of your opponent. This information can be used to formulate a plan of attack – which can be surprisingly effective.

In the first bout you face Heap Big Nose, a redskin with a tendency to stick his chin out too far. Lefts and rights to the head will soon leave him with reservations.

While fighting you will see two horizontal bars above the fighters. The green one represents strength – don't let this fall to zero or you'll be powerless to defend yourself.

The blue bar is the KO meter - once this has reached 100 per cent your opponent will go down.

Following your victory you are given a password which is requested before you are allowed to load the next boxer.

Eight fighters are supplied on the cassette so leave the play key down when the game has loaded.

After much sweating, shouting and



keyboard bashing, I had fought my way through to the fourth bruiser.

Handsome Devil, as he is known to his fans, is a rather robust chap with the complexion of a lobster and some suspiciously pointed ears.

My best result so far against this beast is taking him to the third round before losing.

The Big KO is one of the best boxing games I have played on any computer. It requires skill, concentration, cunning and — most of all — a cast iron chin.

Jon Revis

Sound.	7
Graphics	
Playability	9
Value for money	9
Overall	9

A rival for Adams

Program: The Nine Dancers

Price: £3.95

Supplier: Larsoft, 4 Chantry Road,

Clifton, Bristol 858 20D.

I WAS brought up to believe that you only get what you pay for. While that adage is true for most things in life it certainly doesn't always apply to computer software.

At only £3.95 I can safely say that Nine Dancers compares favourably with many adventures at three times that price.

The program is packaged in a very professional manner with superbly atmospheric background notes to prepare you for the adventure ahead.

"In the Nine Dancers you play the part of a reporter for a local newspaper who has been asked to write an article on the stories connected with some of the local tourist sites."

One such tourist attraction is a circle of nine standing stones about which legends and flights of fantasy abound.

You begin your quest at a bus stop in a narrow country lane outside the village of Steignton.

A quick glance around reveals a litter bin (full of messy rubbish), an old button, a bus shelter and a sign post. My first instinct was to examine the sign which told me that Wychwood was only seven miles away. Having already been there, I turned my attentions to the old button.

This button, it turns out, is part of a very clever chaining puzzle involving a needle and some thread – but I'll leave you to solve that one.

The village of Steignton provides much of the focus of the adventure and all the shops are worth examining.

The postcards and advertisements in the window of the general store reveal the first evidence of the debt that author Geoff Larsen obviously owes to Scott Adams in the writing of adventures.

The humour is refreshing and touches upon contemporary life. Above the door of the tea shop an emblazoned sign proudly displays the longevity of the company's continued business – EXAMINE SIGN shows: Purveyors of fine teas since 1986.

Also watch out for the antique dealer who is bound to rob you blind!

The inlay notes hint at magic and mysticism which certainly have a home in this adventure.

The first sticking points could be the policeman who blocks your way to the



Nine Dancers and, outside the general store, an alarm which must need ringing.

If you want an adventure which compares to Scott Adams at his best, then this is it.

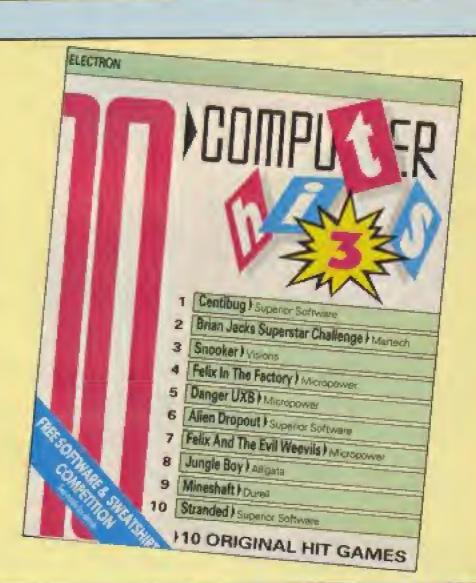
Pendragon

Presentation	8
Atmosphere	8
Frustration factor	8
Value for money 1	0
Overall	8

These are the games everyone wants to play!

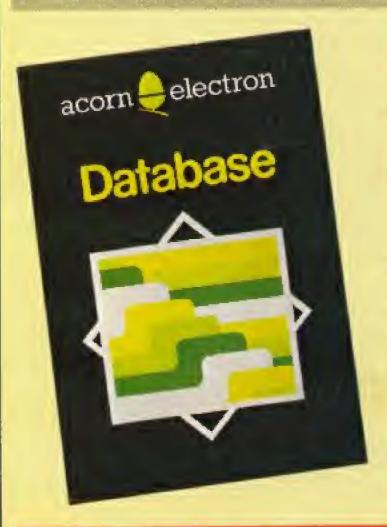
Ten top games from leading software houses compiled into a double cassette package . . . no wonder it's been No1 in the Electron charts for week after week after week!

And now, for readers of Electron User, it's an even bigger bargain. We've done a special deal on your behalf that slashes the price even more!



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	RRP	Special reader offer	YOU SAVE	Otler including subscription	YOU SAVE	
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Acornsoft's classic Database can now be yours for LESS THAN HALF PRICE!

This popular package is an easy-to-use database system which displays records in filing-card format. It allows for up to 240 characters per field and up to 32 fields per record. Alphabetical or numerical sorting can be performed on ALL fields, and there is a very comprehensive search facility.

Data can also be converted to View format, edited using the View word processor and printed out from View.

The package includes a step-by-step tutorial.

RRP £19.95 Our Price £9.95

Will only run with the Electron Plus 3

TO ORDER TURN TO THE FORM ON PAGE 53

More great Electron games

This month we introduce a new volume in our Ten of the Best series - 10 more games to give you many hours of fun and entertainment.

These three packages are crammed with the best games from the last 18 months of Electron User. As an added bonus a previously unpublished game has been added to each one - stunning machine code masterpieces from our technical wizard, Roland Waddilove.

So give yourself a treat . . . with the most popular games compilations we've ever produced.





Jam Butty

Volume 1

Jam Butty: Machine code simulation of high drama on a building site.

Golf: Play a round by yourself, or play against

Haunted House: Fight against all the odds to get out alive.

Space Hike: Another classic. Help the spacemen avoid maurading monsters. Parky's Peril: Help Parky through an invisible maze, racing against time.

Rally Driver: All the thrills of high-speed driving, with none of the risks.

Alphaswap: Your letters are in a twist. Can

you put them in order? Knockout: Fast and furious action as you

batter down a brick wall. Money Maze: Avoid ghosts and collect coins

In an all-action areade classic.

Lunar Lander: The traditional computer game specially written for the Electron.



Atom Smash

Atom Smash: Machine code thrills as you help to save the world from destruction. Bunny Blitz: Go egg collecting, but keep away from the proliferating rabbits. Castles of Sand: Build castles - but beware

the rising tide and hungry sandwarms.

Reaction Timer: Test your reactions with this traffic lights simulation.

Solitaire: The Electron version of the age-old game of logic and patience.

Jumper: Jump for your life in this exciting arcade action game.

Break free: Test your wits and reflexes in this popular classic ball game.

Code Breaker: Crack the code in a colourful

frustrating brointeaser. Parachute: Save the plunging sky divers from

a watery end.

Star Fighter: Attack the bandit ships in this fast-moving 3D punch-up.



Volume 3

Rockfall: Come diamond mining in this fun packed game with its own screen designer. Karate Warrior: Win your black belt in this gruelling test of karate skill.

Grand Prix: Battle your way into the lead in this tricky racing simulation.

Invasion Force: Can you survive wave after wave of relentlessly advancing aliens?

Grebit: Guide the frog across the busy road then across the fast-flowing river!

Fruit Worm: Steer the worm towards the fruit while avoiding rocks and its ever-growing tail. Manic Mole: Watch out for melting platforms and conveyor belts in your quest for jewels. Skramble: Fly your fighter fast and low over the landscape to penetrate enemy territory. Mr Freeze: You'll need speed and strategy to reach the ice blocks before they melt away. Paint Roller: Steer a speeding roller, run

over paint pots but keep clear of the rocks.

TO ORDER TURN TO THE FORM ON PAGE 53

AWARI is a traditional African game for two played on a board with 14 holes arranged in an elliptical format.

Six belong to each side, with the end ones being the home holes. Within these you sow seeds. Initially three for each hole are provided.

The object of the game is to get more seeds in your home than your opponent.

Play consists of taking the seeds in one of your own holes and distributing them, one by one, anticlockwise round the holes, starting at the adjacent one.

Seeds that fall in your own home hole will stay there. Apart from these there are only two more rules to learn:

- If, on your turn, you sow seeds which result in your last seed falling into your home you can have a second turn.
- If your last seed falls into an empty hole and the opposite – whether your own or your opponent's – hole contains some seeds, then you capture these, plus the one you were putting into the empty hole, and add the lot to your home hole.

The game is over when one side or the other has completely empty holes.

The board is numbered 1 to 6 for the left hand player's holes and 8 to 13 for the right hand player's holes, also the computer's holes.

To specify a move you need only type in the hole's number from which you will be sowing from.

By MARTYN EWERS VARIABLES Number of seeds in each hole. First four latters of players names for 5%(1 Used as a flag. 0 = one player, 1 = two H\$() Used to see if an extra go is allowed. See it last seed will land on the computer's EX% G0% See if last seed will land on an empty hole 11% 1.2%

PROCEDURES

Title Sets up heading and asks if instructions are wanted and the number of

players.

Board Draws the board setting up the first

Mistake (H%, 0%) Scores, three seeds in each hole.

Tells you the wrong hole has been

Seed A player has tried to use a hole with no seeds in it.

Time(W%) Causes a pause.

Score Puts the new scores on the board.

Move Sets up new score values after a move.

Instruct Gives instructions.

players.

EX% Used to see if an extra go is allowed.

GO% Hole chosen.

L1% See if last seed will land on the computer's home.

L2% See if last seed will land on an empty hole when the opposite has seeds in it.

Number that fits in with the L1%, L2% searches.

Number of the hole plus the number of Number of the hole that was holds the number of the hole that was found in the L1%, L2% search.

Found in the L1%, L2% search.

R% Randomly chooses one of TempS%() for the computer's go.

L3% If L2% or L1% found nothing then L3% looks for the computer's go.

L3% If L2% or L1% found nothing then L3% looks for one so that these seeds cannot be taken by the opponent.

Full listing starts on Page 20

From Page 19

18 REM **** Awari ****** 28 REM *By Martyn Ewers* 38 REM (c) Electron User 48 IF PAGE>4E88 50TO 287

50 DIM SI(14),H\$(2),Teap SI(14)

68 MODE1: COLOUR!: PROCTit le: PROCBoard

70 DEF FNY(X)= SX(1)+SX(2)+SX(3)+SX(4)+SX(5)+SX(6)

88 DEF FNC(X)= SX(8)+5X(9)+SX(18)+SX(11)+SX(12)+SX(13)

98 REM * Play game *
188 COLOURISE:COLOURE:CLR
\$=STRING\$(35," ")

118 IF FX=8THEN PRINTTAB(5,25); "Do you want to go fi rst (Y/N) ?" ELSE 60TO 138

128 Q\$=6ET\$: IF Q\$="Y"THEN 378 ELSE 6070 500

138 GX=8

140 GX=GX+1

150 EXX=0

160 EXX=EXX+1::PRINTTAB(5, 28);CLR\$

178 PRINTTAB(5,25); "It's

";H\$ (6%);"'s qo.";

188 INPUT: GOS

198 IF 6%)1 THEN 218

200 IF VAL(60\$)(1 OR VAL(60\$))6 THEN PROCMistake(1,6):60T0170 ELSE 60T0220

218 IF VAL(60\$)(8 OR VAL(60\$)>13 THEN PROCMistake(8, 13):60TO 178

228 GOX=VAL(GO#)

238 IF SX(SOX)=8THEN PROC Seed:SOTO178

248 PROCMove

250 IF MX=7 OR MX=14THEN

260 IF GX=2THEN 290

278 IF SX(MX)-1=8 AND SX(14-MX))8 THENSX(7)=SX(7)+(S X(14-MX))+1:SX((4-MX)=8:SX(MX)=8

288 6070388

298 IF SX(MX)-1=8 AND SX(14-MX)>8 THENSX(14)=SX(14)+ (SX(14-MX))+1:SX(14-MX)=8:S X(MX)=8

300 PROCScore

318 IF FNY(X)=8 OR FNC(X) =8 THEN 1848 328 IF 61=2THEN 348

338 IF MX=7 AND EXX=1 THE N PRINTTAB(5,28); "Another g o allowed,":PROCTime(200):6 0TO 168

348 IF MX=14 AND EXX=1 TH EN PRINTTAB(5,28); "Another go allowed.":PROSTime(208); 8670 148

358 IF 62=2 THEN 138 ELSE

60TO 148

380 :

378 GY=1

380 PRINTTAB(5,25); CLF\$: T AB(5,28); CLR\$

398 PRINTTAB(5,25); "Type in your move";

408 INPUTEOR

410 IF VAL(80%)(1 OR VAL(60%))6 THEN PROCMISTAKe(1,6 1:6078398

428 SOI=VAL(SOS): IF SI(60 I)=0THENPROCSeed: GOTO380

438 PROCHove

440 IF MX=7 OR MX=14 THEM

450 IFSX(MX)-1=0 AND SX(1 4-MX)>0 THENSX(7)=SX(7)+(SX (14-MX))+1:SX(14-MX)=0:SX(M X)=0

460 PROCScore

478 IF FNY(X)=80RFNC(X)=8 THEN1848

488 JFMX=7 AND SI=1 THENG X=2:PRINTTAB(5,28); "Another go allowed.":PROCTime(200) :6010380

490 61=0:601=0

500 T1=8

510 EXE=0

528 EIX=EIX-1

530 L1X=7

548 LIX=LIX+1

558 IF SX(L1%) = 8THEN 598

580 KZ=SX(L|X)+L1Z

570 IFK% 14 THENK%=K%-14:

SBB 1FKR=14THENTI=TX+1:Te mpSY(TX)=E1Y

598 IF LIX (13 THEN 548

608 L27=7

SOTO 578

618 LZX=LZX+1

628 IF SI(LZI) = @THEN688

638 KI=SI(L21)+L2I

540 IF KY)14 THENKY=KY-14 :6070540

550 IFKE=7 OR KE=14 THEN 680

668 IF KZ=LZI THEN 488

678 IF \$2(KZ)=8 AND \$2(14 -KX)>8THEN TX=TX+1:Temp\$2(T X)=L2X

680 IF L21(13 THEN 610 690 IF T1=0 THEN 800

700 IF TX=1 THEN BOI=Temp

SITIAL: GOTO 728

718 RI=RND(TX):60Z=TeepSZ

720 PRINTTAB(5,25); CLR\$; T AB(5,28); CLR\$; TAB(5,25); "Ny

nove is hole ";GDX 730 PROCTime(200):PROCMov e:PROCTime(200)

748 IF MX=7 OR MX=14 THEN

750 IF SX(M2)-1=8 AND SX(14-M2)>0 THENSX(14)=SX(14)+ (SX(14-MX))+1:SX(14-MX)=0:S X(MX)=0

760 PROCScore

778 IF FNY(X)=0 OR FNC(X) =0THEN1840

788 IF MX=14 AND EXX=1 TH EN PRINTTAB(5,28): "Another go allowed.":PROCTime(288): TX=8:EXX=2:60T0528

790 PROCTING(200);EXX=0;S 0TO 370

988 L31=7

918 L31=L31+1

328 IF SX(L3X)=8 THEN 848

838 1F SI((4-L3I)=8 THEN TX=TX+1:TempSI(TX)=L3I

848 IF L3% (13 THEN 818

858 IF TX28 THEN 788

868 GOX=RN9(6)+7

DIG TO CHICAGO THE

878 IF SY(60%)=0 THEMBAR

898 GOTO728

878 :

900 DEFPROCBoard

918 VDU19,138,2,8;8;:COLO

UR138:CLS

928 GCOLE, 8: MOVE(58, 394: P LOTS, 1174, 384: PLOT85, 158, 76 9: PLOT85, 1174, 768

930 GCOL0.1: MOVE168.374:P LOTS, 1184, 374: PLOT85, 168, 75

9: PLOT85, 1184, 758 948 COLOUR129: PRINTTAB(15

,3)" A W A R I " 950 FDRIX=1TO(4:S1(2X)=3;

NEXT:SX(7)=8:9X(14)=8

950 PRINTTAB(10,51° 6 5 4 3 2 1 "; TAS(10,2 1)" 8 9 18 11 12 13"

970 COLOUR:29: PRINTTAB(5. 10) H\$(1); TAB(5.18) "HOME"

980 PRINTTAB(33,10)H\$(2);

TAB (33.18) "HOME"

998 PROCScore

1000 GCOL3,3

1010 FOROX=160T011845TEF12 8: MOVEDX, 374: DRAWDX, 758: NET

1020 MOVE160,502: DRAW1184, 502: MOVE160,630: DRAW1184,63

1838 ENDPROC

1848 :

1858 DEFPROCTITLE

1868 VOU7: TS="A N A R 1"

1070 PRINTTAB(15,10):

1000 VDU23,1,0;8;8;8;8;

1898 FORLX=1T09

1100 PX=48FFF+8*(ASC(M)0*(T*,LX,11)-32):VDU23,224

1:18 FOROX=:TD4:YDUPX?QX,P

1128 FORR1=5T08: VOUP1?R1.P 17R1:NEXT: VOU224,18,8,225,1

1130 NEXT: COLOUR2

1148 PRINTTAB(12,15) "By Me

rtyn Ewers": COLOURS

1150 PRINTTAB(5,201"DO YOU

MANT INSTRUCTIONS (Y/N)"

1168 *FX15.8 1178 O\$=SETS: IF O\$="Y"ORO\$

="N"THEN!188 ELSEGCTD:168 :188 IF Os="Y"THENPROCIASE

1198 FFX15,8

1206 CLS:PRINTTABLIB,18);

1 or 2 Players ?"

1210 PLX=SET: IF PLX<49 OR

91% >58 THEN1200 1220 IF PLX=49THEN H4(2)=*

MY":60TD1290 1230 INPUT"First players

initials "cH\$(1)

1248 IF H&(1)=""THENH&(1)=

"TWIT"
1250 INFUT'"Second players
initials ":HF(2)

\$260 IF H\$ (2) = ""THENH\$ (2) = "BURK"

1270 DEF PROCEFFOR

1288 FZ=1:ENDPROC

1290 INPUT' What are your initials ":H\$(1)

1300 1F H#(1)=""THENB#(1)=

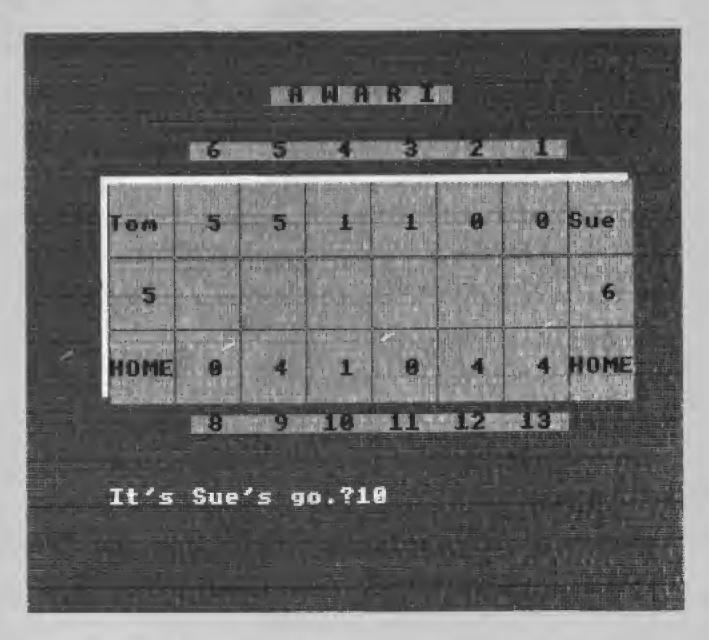
"TWIT" | 1318 H\$11) =LEFT\$(H\$(1),4);

1328 :

FX=0: ENDPROC

1330 DEF PROCMESTAKE/P%.O%

1"



1340 SDUNDI,-15,1,20 1358 PRINTTAB(5,28:"You ca n only use holes ":HI:" to ":07

1368 PROCTIME (308): PRINTTA B(5,28):CLR#:TAB(5,25):CLR# :ENDPROT

1378 :

1388 DEF PROCEnstruct

1398 CLS:PRINTTABILE.21: "A W A R I": SCOLB. 1: MOVED. 925 : ORAWL 279, 925

1400 COLOUP CAPPINT" ANA RI is a game for two player But you can play ag ainst the computer if you 6:5h.

1410 PRINT' The object o f the came is to end up" 1428 PRINT"with more seeds in your MOME than the" 1438 PRINT other serson. o

r the computer."

1448 PRINT'" When you mov e you type in the hole" 1452 PRINT'From which you

wish to use your seeds." 1450 PRINT"They are then a pread one in each"

1470 PRINT hole. If the la st seed lands on your" 1488 PRINT HOME you will a

et another go, unless"

1498 PRINT you have alread . had one."

1500 PRINT" Also if your last seed falls into an"

1518 PRINT"eapty hole then your home base gets"

1528 PRINT added to it the opposites amount plus"

1530 PRINT the seed that : anded in the empty hole."

1548 PRINT'" The game end s when one side does not"

1550 PRINT have any more s eeds left."

1548 REPEATAPRINTIABLES, 29

1570 COLOURS: FRINTFAB:18.2 9) Press space to play. ":PR OCTube (5)

1588 UNTIL INKEYS-99): ENDS ROS

1590 :

1688 DEF PROCTINE (NZ)

1610 TIME=0: REPEAT UNTIL T THE WAY

1620 ENDPROC

1530 :

1640 DEF PROCSeed

1550 SOUND1.-15,1,20

1660 PRINTTABES, 281: "There

are od seeds there 141% 1678 PROCTIME (258): PRINTTA

B(5,28);CLR#:TAB(5,25);CLR# 1588 ENDPROC

1698 :

1700 DEF PROGScore

1718 COLOURS: COLOUR129

1720 12=7

1730 EXECUTE PRENTABLIZA

明·李子、[編]: " "

1740 PRINTTAB((2%+4)+7,10)

:5%(7-2%) 1758 IF TXN1 THEN 1730

1768 PR:MTTAB(7,14);S2(7);

TAB:35,14):5%(14)

1770 XX=2

1780 XX=XX+1:98[NT748[4XX*

4) +7,1814" "

1790 PRINTTAB([XX*4)+7,181 (SX(XX+J)

1990 IF X215 THEN1790

1910 COLOURO: COLOURIDO

1838 EMBPROC

1838 :

1840 REM "A WINNER!!" 1950 PRINTTAB(5,25); ELR#; T A8(5,28):CLRF

1858 IF FX=0 THEN1910

1878 IF SI(?)=SI(14)THENPR INTEA8(5,25); "You both equalised with ";SX(7); points.

": PROCTime (300) 1880 IF SX(7)>SX(14)THENPR INTTAB(5,25);H\$(11;" beat " :H\$(2):" by ":SX(7)-BZ(14): PROCTime (308)

1898 IF SZ(7) (SZ(14) THENPR INTTAB(5,25); HF(2); " beat " :H\$(1):" by ":SI(14)-SI(7): PROCTIME (300)

1988 59TO1948

1918 IF SX(7)=SX(14)THENPR INTTAB(5,25); "We equalised with ":SX(7);" each, ":PROCT

ime(300):60TO (940

1920 IF SX(7)>SX(14) THEMPS INTTAB(5,25); "You beat ME !

by ":SX(7)-SX(14):PROCTIA

e(300):60T01940

1938 PRINTTAB(5,25) "I beat you by ";SI([4)-SI(7):PROC Time (300)

1948 REM NEW GAME

1950 PRINTFAB(5, 29) "Do you wish to play again"; TAB(10

,381 TYPE Y or N.

1960 IF INKEY1-691 THEN RUN ELSE IF INKEY (-84) THEN END

1970 BOTO1960

1988 :

1998 DEFPROCMOVE

2000 MVX=80X+SX(601):SX(GD

XI = D: MX = GOX: CX = GOX

2010 REPEAT

2020 CX=CX+1: MX=MX+1

2030 IF MX)14 THEN MX=1

2848 SX(MX)=SX(MX)+1

2050 UNTIL CX) = MVX

2868 ENDPROC

2070 REM Relocate

2888 *KEYS FT. : MDY=PA, -&E8

0: F. 1%=PA. TO TOP 5.4: !!!%-

DX) = ! [X:N. : PA. = & EBG: ! (TOP - D

X) =&FF0D:0, IMPUNIN 2090 +FX138,0,128

This listing is included in this month's cassette tape offer. See order form on Page 53.



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Take a rom with a View...

ROLAND WADDILOVE introduces a new series on some of the Electron's more serious applications

IN this series we're going to be looking at some of the more serious software available for the Electron.

We'll be discussing word processing using View, spreadsheets using View-sheet and the languages Pascal, Lisp and Logo.

These very powerful packages, available on rom cartridge, are currently being sold for a fraction of their original recommended retail price and are bargains not to be missed.

We'll be showing just what they are capable of and how to get the best out of them.

To kick off this new series I'll be taking a close look at View, one of the most powerful word processing packages available for the Electron.

In fact it compares well with packages costing 10 times as much running on powerful micros such as the IBM PC.

It is similar to Wordstar, which is perhaps the most popular word processor around and shares many of the commands and key functions.

Using View you can write letters, articles, documents, reports and even whole books on your micro.

With a suitable printer you can print them in a wide variety of type styles, underlining titles and headlines, emphasising important sections, numbering pages and so on.

Of course, you can do all this with a simple typewriter. However the great advantage of a word processor is that when you've finished typing you can go back easily to alter, modify and correct the text until it's perfect.

You'll find that in the long run it is quicker and the final product is much more professional.

This month's article is devoted to beginners discussing how to get started, input text and use some of the common editing commands. Next month we'll investigate formatting and page layout.

Finally I'll be presenting a View spelling checker complete with it's own dictionary of several thousand words.

This will proof read your text and point out any typing errors or slips you've made.

Let's first see how to get started: Plug View into your Plus 1 or Rombox and switch your Electron on. What happens now depends on what equipment you've got.

You should find that your micro starts up in View with the message:

VIEW
Bytes free 16894
Editing No File
Screen mode 6

If you don't see this type:

*WORD

to enter View.

The amount of memory free will vary and also depends on what extras you've got attached.

You are in command mode now and View will accept a number of commands such as LOAD, SAVE, MODE and so on, plus all the star commands you normally use from Basic.

To return to Basic at any time you can type:

*9NSF0

Try it and see and while you're in Basic change the

background colour to blue with:

Vou 19,0,4,0,0,0

and return to View with:

*₩0.00

and you're back in command mode with a blue screen.

Tap the Escape key to enter Edit mode. You'll see a flashing cursor sandwiched between a dotted line and a row of asterisks. Now you are ready to enter text.

Try typing in a few words - the first paragraph of this article will do - and see what happens.

Don't bother about correcting typing mistakes, and when you get to the end of the first line pay no attention and carry on regardless. View will automatically move on to the next line.

You should end up with something like Figure I.

You can move the cursor back and forth through the

In this series we're going to be looking at some of the more serious software available for the Electron. We'll be discussing word processing using View, spreadsheets using Viewsheet and the languages Pascal, Lisp and Logo.__

Figure I: Using the cursor controls

FJ series we're going to be looking at of the more some serious software available for the We'll be discussing word Electron. processing using spreadsheets the language Viewsheet and using Pascal, languages Logo. powerful These available On rom packages, currently being cartridge, are fraction of tor a sold recommended retail original and are bargains not to be missed. Just We'll be showing . you capable and how to are the best out of them. *****************

Figure II: Using block commands

text using the cursor keys, up and down as well as left and right.

There are several alternatives to using the cursor keys. Try holding down the Caps Lk/Func key and press 2 at the same time (I'll abbreviate this to Func+2).

The cursor will move to the start of the text on the first line. Now press Func+3 and the cursor will move to the end of the text on the last line.

Func+5 moves the cursor to the start of the line it is currently at and Func+6 moves it to the end.

Now try Func+A and the cursor will move backwards stopping at the start of each word. In a similar fashion Func+F moves forward a word at a time.

If you type in a long document you can move through it one screen at a time using Func+C to move down and Func+R to move up.

We have only typed in a third of a screen so far, so the cursor is moved to the top or bottom line.

As you can see there are rather a lot of keys to memorise, so it's best to have the function keystrip provided with View resting on the micro just above the keyboard.

So far we've typed in a few words and learnt how to

move the cursor through the text. Now we'll try editing it. Your screen should still look like Figure I.

Move the cursor to the start of the text with Func+2 and type in a word or two.

Notice that the text you type in overwrites what is already there - you are in overwrite mode.

This is useful for simple editing like changing thier to their. You can move to the ie, type ei and the word is corrected.

However you can't insert a word into the text. The characters simply overwrite what is currently at the cursor position.

Try deleting the first word. Press Func+2 and move to the end of the word using cursor right. Now hold down delete and the word will disappear.

Note however that it is merely overwritten with spaces - we're still in overwrite mode.

This isn't the best way of editing, so press Func+W to enter insert mode.

You'll see a letter I appear in the top left corner of the screen to confirm this. (Ignore the formatting flags F and J for the moment).

Now move your cursor somewhere in the middle of the text and try typing a word or two.

You'll see the remaining text to the right of the cursor being shunted along to make room for the new words. The existing text is not overwritten.

The screen display may look a bit peculiar as text is pushed right, off the screen. Carry on regardless, we'll see how to get round this next month.

Press Delete to delete the word you've just typed in.

Notice that the text to the right of the cursor is pulled left to fill the gap opened by the deleted word. This is deleting backwards.

Alternatively you can delete forwards by pressing Func+G. Try it and see what happens.

Text to the right is pulled left and deleted but the cursor stays where it is and doesn't move.

Your text may look a bit of a mess by now but no matter, we're still experimenting.

Move to the start with Func+2 and to the start of the second word with Func+F, Func+F.

Now press Func+T and View will wait for you to type a character. It shows this by printing CH in the top left corner of the screen.

Take care, it will delete all text until this character.

Tap the spacebar and the

word in front of the cursor will disappear - View has deleted all characters up to the first space, the one immediately following the word.

Move to the start of text with Func+2 and insert a blank line with Func+7. Now you are able to insert a new paragraph at the beginning.

Dan't worry when you come to the end of the first line, just carry on regardless and View will automatically insert more blank lines as you need them.

You can delete the lines you have just entered with Func+8.

Take care with Func+7 and 8. The keys are next to each other on the keyboard and have completely opposite functions. Deleting a line when you mean to insert one is frustrating, to say the least.

Using the cursor and editing functions you've learnt so far try and restore your screen so that it looks like Figure Lagain.

If all else fails press the Escape key to enter command mode, type:

MEW

to delete everything you



From Page 25

typed in and press Escape to re-enter edit mode. Now type in the first paragraph again.

You should have a screen looking like Figure I, so now we'll move on and enter the second paragraph.

First press Func+3 to move to the end of the text and press Return to move to a fresh line. Press Func+1 to insert an invisible tab character and type in paragraph two.

Your screen should now look like Figure II.

We'll try same block editing commands, so move your cursor to the start with Func+2 and press Func+Q.

View is now waiting for you to press a number and prints MK in the top left corner of the screen.

Press 1 and the the start of a block of text will be marked by inverting the first character.

Now move to the end of the first paragraph – use cursor down followed by Func+6 to move to the end of the line.

Press Func+Q again followed by 2 to mark the end of the block. The character at the cursor is inverted again.

Now you have two markers, 1 and 2, enclosing a block of text.

There are several commands operating on such blocks and the simplest is probably Copy. Move to the end of text with Func+3 and press Return to start a new line. Now press the Copy key and the text between the markers will be copied to the current cursor position.

Note that the markers are still present around the first paragraph. You could go back and delete them, but we'll use them for the next command.

Delete the text enclosed by the markers by pressing Func+V.

The overall result is that the first paragraph has now been moved to the end. We could have moved it in one operation by pressing Func+N but I wanted to demonstrate copy and delete.

To round off this month's totorial press Escape to return to command mode. Type:

COUNT

and View will tell you how many words you've written. Now save them with:

SAVE home

where name is the filename. Notice that you don't need quotes like Basic.

If you name your work with:

NAME DOME

View will print:

Editing name

in the title message and you can type SAVE without a name to save the text.

You can load the View file next time you switch on with:

READ name

Disc drivers can use LOAD as well, it does the same job as READ but is faster.

And that's where we'll leave it for now. Next month we'll see how to format the text and design our page layout.

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Thinking back to last month you'll no doubt recall that we came across the PLOT command. This takes the form:

PLOT code, a Coordinate, y Coor

where xCoordinate and yCoordinate are the familiar screen coordinates we've met when using MOVE and DRAW.

The code parameter is used to select what PLOT does, From this you'll see that there's more than one type of PLOT.

in fact we've already come across two uses of it. The first, with code equal to 5, corresponds to the DRAW command. The second, when code is 4, does the same job as MOVE.

This means that:

PLOT 5,250,123

is the same as:

DRAW 250,123

just as:

PLOT 4,245,897

is in effect identical to:

MOVE 245,897

Should you have any lingering doubts about PLOT 4 and PLOT 5, Program 1 should soon have you thinking along the right lines.

It shouldn't be too hard to see how the sequence of commands:

MODE 1 PLOT 4,500,500 PLOT 5,700,700 Plot 5,800,750

results in two

18 MEM Program 1 Za Mode 1 30 FOR loop=1 TO 100 40 choice=RND(2) 50 Ef phoise=1 THEN code=4 ELSE code=5 60 GCOL 0, RMD(3) 70 PLOT code, RND(1279), RND(1823) BR NEXT LOOP

Program I

Part thirteen of the Electron graphics series by TREVOR ROBERTS

appearing on the screen. Figure I shows the coordinates involved.

Let's look at these instructions in terms of the invisible graphics cursor. The first PLOT moves this elusive beast from its original position at 0,0 to (roughly) the centre of the screen.

The next PLOT then moves the cursor from 500,500 to 700,700 leaving a line behind it as it travels.

Finally our long-suffering cursor is ordered to 800,750 again trailing a line behind

This final move can be looked at in another way. Instead of telling the graphics cursor to go from where it is (700,700) to 800,750 we could use a second method.

We could, in effect, say

Figure 1:

and relative

"go 100 units along the x axis, and then 50 along the y axis" or, more succinctly, "100 across, 50 up". Either way the result is the same.

The first method is the one we've used with our PLOTs and DRAWs and uses absolute coordinates.

This means that the numbers used to specify where the graphics cursor is to end up are the real, actual, absolute screen coordinates based on the bottom left corner being 0,0.

The second method we haven't come across before. Here the coordinates used are relative coordinates.

They specify where the cursor is to end up by giving its desired position compared to, or relative to, the point the cursor is already

It's a bit like giving direc-

tions. You can give the map reference of the desired place (the absolute method) or directions for getting there (the relative method).

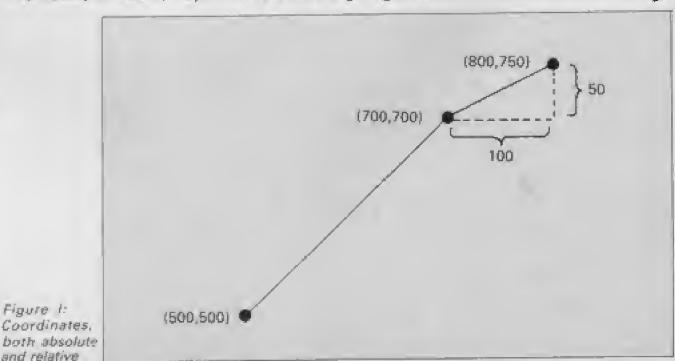
Sometimes relative coordinates are more useful than absolute ones. The Electron allows us to use relative coordinates by way of a PLOT command with code equal to 1.

To see this in action, try the fallowing set of commands:



The first three instructions put the micro into Mode 1 and draw a line from point 500,500 to 700,700.

The last instruction uses PLOT 1 to get the computer



Graphics

From Page 27

to move the graphics cursor from its present position leaving a line to mark its path, its final position is to one with an x coordinate 100 greater and y coordinate 50 greater than the original point.

Hence the final point will be at 800 (700+100), 750 (700+50). This duplicates the previous sequence of commands but now PLOT 1 is used instead of PLOT 5.

If you want to see the dif-

10 REM Program II 20 Mode 1 30 FGR loop=1 FG 10 40 GCGL 0,100p MOD 2 50 PLOT 1,100,100 60 NEXT loop

Program II

Table I:
The PLOTs

so for.

ference between absolute and relative coordinates then use:

6CDL 0,2 PLOT 4,500,500 PLOT 5,700,700 PLOT 5,100,50

Now a line is drawn from 700,700 to the absolute position 100,50. Program II shows PLOT 1 in action. Can you explain what happens when all its PLOT 1s are replaced by PLOT 5s?

Just as PLOT 1 corresponds to the DRAW com-

mand - the only difference being the use of relative coordinates - so there's a relative MOVE. It's PLOT 0 which you'll see in action if you type in:

MODE 1 PLOT 1,300,300 PLOT 0,150,200 PLOT 1,300,300

The gap is produced by the PLOT 0 moving the graphics cursor without leaving a line.

All four code parameters

18 REM Program [1]
20 MODE 1
30 FOR loop=1 TO 188
18 choice=RND(2)
58 JF choice=1 THEN code=0
ELSE code=1
68 GCOL 8,RND(3)
70 PLOT code,RND(188),RND(188)
88 NEXT Loop

Program III

we've come across for PLOT are shown in Table I. Program III shows both relative PLOTs in use. Notice how the lines always slope upwards from left to right. Can you do something about this?

 That should keep you busy until next month when the PLOTs get even thicker!



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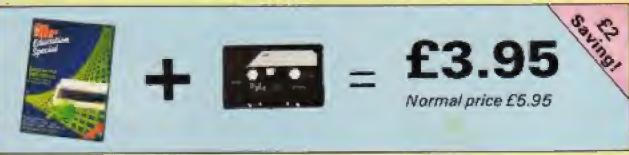
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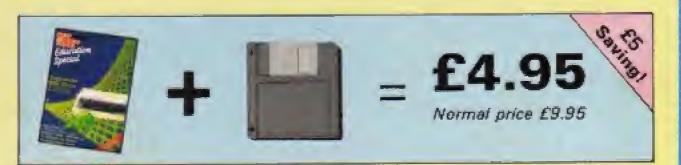
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To order turn to the form on Page 53

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By ANDREW OLDACRE



VARIABLES

YS Your side.

A\$() First division teams.

B\$() Second division teams.

Your squad.

TR() Players' talent rating.

PROCEDURES

STATS
RESULTS
Display match facts.
Display the results.
CUP Play cup rounds.
FINAL Play cup final.
INJ Decide players' fitness.
MARKET Buy and sell players.

Full listing starts on Page 34

From Page 33

18 REM SuperAoss

20 REM By Andrew Oldacre

30 REM (c) Electron User

48 IF PAGE>GEDE THEM 3600

SØ SFS=" ":LCS="Man United" :(WS="Liverpool";INS="[";SR=12 : MON=41000: MOR=45

60 VOU 23,1,0;0;0;0;

70 DIM AS(10), BS(10), A(10), B(10), CUP\$(20), IO\$(20), P\$(10), #\$(10),\$0\$(15),TA(15),WGE(15), G(15),\$1\$(15),TF\$(30),WAGE(30) ,RAT(30),R1\$(5),A1\$(5),R2\$(5), A2\$(\$),(F\$(2),CF(2),RH(5),RA(5 1,88H(5),84A(5)

88 DIM AAS(10),865(10),FCS(

90 FOR X=1 TO 10:READ AS(X) HEXT

100 FOR X=1 TO 10: READ BS(X)

118 FOR X=1 TO 20: F6\$(X+10)=

A\$(1NT(10+RND(1)+1)); NEXT 128 FOR X=1 TO 18: F(S(X)=85) INT(18:2ND(1):11):NEXT

130 FOR X=1 TO 30:READ TESCX):NEXT

140 FOR X=1 10 12:545(X)=1FS (A):MEXI

150 FOR X=1 TO 12: [F\$(X) =/* : NEXT

168 FOR X=1 TO 10: AAS(X)=AS(X):BBS(X)=BS(X):NEXT

17B \$9\$(13)="+":\$9\$(14)="+": 202(12)=.+.

180 FOR X=1 TO 30

198 RAT(X)=INT(SB*RND(1)+1): MAGE(X)=8AT(X)*188B

200 II X<13 TR(X)=INT(10+RND

(1)+1): WGE(X)=78(X)+1890 210 NEXT

220 DATA Arsenal, Chelsea, Eve rton, Liverpool, Man United, Nott s Forest, Tottenham, West Ham, Lu ton foun, Shelf Wed

230 DATA Man City, Newcastle, Exford, loswich, Norwich, Crystal Pal, Leeds Utd, Watford, Asson V

illa, Southampton 240 DATA M. Southell, G. Steven s,K.Sansom,K.Ratcliffe,D.Mount field, P. Reid, G. Rix, G. Hoddle, M. Hately, D. Oldacre, A. Oldacre, P. S. racevell, L.Rush, F. Stapleton, G.

Lineker, M. Hughes, P. Walsh, K. Dal glish, G. Souness, L. Brady, C. Wich olas

258 PATA M.Platini, D. Maradon a,P.Beardsley,R.Wilkins,B.Robs on, L. Chapman, F. McAvennie, P. Nev in, K. Dixon

260 400 19,0,4;0;19,1,7;0;:0 LS:PRINTFA9(14,3)**SUPERBOSS** TAB(10,10) LOAD SAVED GAME(Y/N Dr:::1NPUTGS

270 IF OSETY PROCLOAD ELSE PROCSELECT

280 FOR X=1 TO 10:4(X)=0:B(X) = 0 : NEXT

298 MOR=45:1MS="1"

300 FOR X=1 TO 10: (UP\$(X)=A\$ (K):NEXT

318 FOR X=11 TO 28: CUPS(X) =B \$(X-18):NEXT

320 FOR X=1 TO 20: 108="[":NE

330 VOU 19,0,1;0;19,1,7;0;:C

LS:PRINTTAB(P,5) *** CHARITY S HIELD ***"TAB(2);"***LEAGUE CHAMPIONS V CUP WINNERS *** : HS = INT(5 * RND(1)): AS= INT(5 * RND(1)

348 IF LOS-OWS CLS: PRINT'FAB" (8) The CHARITY SHIELD ***"T AB(2); *** * GOUBLE WINNERS A B B SIDES***.

350 PRENT"TAB(9)LCS" V "C

¥\$. 360 PRINITAB(7,21) PRESS SPA CE BAR FOR RESULT": REPEATUNTIL GET: CLS: PRINTTAB(18,5) CHARITY SHIELD RESULT TAB(9) LCS ": HS;" "CWS" "AS: SOUNDB, 3, -

4,8:SOUNDB,3,-4,6 378 sfx21

380 PRINT'TAB(11)" ** PIEASE WAST * * T: NOWE = TIME: REPEATURILT THE=HOME+330

390 FOR X=1 10 10:88\$(X)=8\$(

X):AAS(X)=AS(X):NEXT 400 FOR X=1 TO 15:SYS(X)=" " :G(X)=B:NEXT

410 VOU 19,0,5;0;19,1,0;0;:C LS:PRINTTAS(18,1)" "Y\$" Fixtur

es+"TAB(12)"+DIV(SION "; b;"+" 420 IF 0=2 60TO 450

430 PRINT'TAB(10)A\$(2)"TAB(T D) AS (3) TAB (18) TOFA (UP ROUND 1+"TAB(10)A\$(4)'TAB(10)A\$(5)' TAB(18) ** FA CUP ROUND 2 *** 149(10)A\$(6)TAB(10)A\$(7)TAB(10)T *FA CUP ROUND 3+"TAB(18)A\$(8) TAB(18)"+FA CUP SEMI-FENAL+" TAB(10)AS(9)

448 PRINTTABERBO"* FA CUP FIN AL * TAB(10) A\$(10) "TAB(10)"*E nd Of Season*':6070478

450 PRINT'TAS(10)85(2)'TAB(1 0)8\$(3) TAB(19) . FA CUP ROUND 14"T48(10)8\$(4)'TAB(10)8\$(5)' TAB(FB)**FA CUP ROUND 2**TABC 10)8\$(6)'TAB(10)8\$(7)'TAB(10)" *FA CUP ADUND 3 * TAB(18)8\$(8) "TAB(18)" + FA CUP SEM! - FINAL + " T48(10)85(9)

46B PRINTTABGIBD ** FA CUP FEN ALP"TAB(10)8\$(10)"TAB(10)"EE nd Of Season**

470 PRINTTAB(10,21)**PRESS S PACE BAR*': REPEATURTILGET: CLS

488 PICK=8:6ME=8 498 PROCEEAN

500 PROCSTATS

518 PROCMATCH

528 PROCRESULTS

530 PROCTABLES

540 IF SQ<15 PROCHARKET

550 PROCSELL

560 PROCFINANCE

570 PROCINA

580 IF GME=2 OR GME=4 OR GME =6 DR 6ME=7 PROCCUP

598 IF GME=8 PROCFINAL

SOB IF GME=9 PROCEND ELSE 49

618 DEFPROCSELECT

628 CLS: PRINT'

630 FOR X=1 TO 10: PRINTIABLE 2); X; TAB(15)BS(X); NEXT: PRINT'T AB(12) PICK A SIDE :: EMPUTN

640 IF N>FB OR N<1 THEN 620 ELSE Y\$=8\$(W):002:T\$=8\$(1):8\$(1)=YS:8S(N)=TS

558 FOR X=1 TO 18:88\$(X)=8\$(XI: NEXIX

460 ENDPROC

578 DEFPROCTEAR

888 VDU 19,0,4;0;19,1,7;0;:C LS:PRINTTAB(7,1) YS" Division "

698 PRINTTAB(1,2) No. PlayerSkill.Worth..Goals.pdfi 700 X=1

710 PRINTTAB(2); x; fA9(5); s95 (X); TAB(18); TR(X); TAB(22); "{"; WGE(X); TAB(31); E(X); TAB(37); ST \$(X):X=X+1:1F X>13 THEW 728 EL SE 718

720 PRINT: PRINTFAB(11) Playe rs Picked ";PICK

738 PRINT' p=Picked,d=Drop ped, i=injured, t=Fit*

740 +FX21

750 IF PICK>11 THEN 800

760 IF PICK<12 PRINT" PICK A PLAYER OR RETURN TO PLAY";: INPUTN: IF N=0 ENDPROC

778 IF M<1 OR N>15 THEN 688 780 [F SQ\$(N)="+"OR ST\$(N)=" 1" OR \$7\$(N)="p" THEN 688

798 PICK=PICK+1:STS(N)="p":6 010680

BOO PRINT DROP A PLAYER; + IMPUTN

STO IF HED THEN ASE

828 IF H>15 OR N<1 THEN 688 830 IF STS(N)<>"p" THEN BOB

848 STS(N)="d":P1CK=P3CK+1;6

850 DEFPROCSTATS

860 CLS

878 VDU 19,0,1;8;19,1,7;8;:C LS: PRINTTAB(10,3) * MATCHEACTS*

888 GME=GME+1:OPP=SME+1 898 IF D=1 OPPS=A5(GPP) ELSE

OPPS=B\$(OPP) 900 CT=0

918 X=1:REPEAT

920 IF STS(X)="p" CT=CT+TR(X

938 X=X+1:UNTILX>15 948 CT=CT/11:CT=INTER

95@ OPPAVE=1NT(10.8ND(1)) 968 IF D=2 AND OPPAVE>7 OPPA

VE=OPPANE-INT(2*AND(1)+1) 978 IF a=1 AND OPPAVE<3 OPPA

VE=OPPAVE*INT(2*RWD(1)+1) 980 PRINTTAB(18) OPPOSITION

998 PRINT TAB(10) AVERAGE SK

ILL "; OPPANE" 1000 PRINT'TAB(10) OUR AVERAG

E "; CT

1010 PRINT'TAB(10) TEAM MORAL E "; MOR; "X"

1020 PRINT'TAB(10) CLUB MONEY E"; NON

1838 PRINTTABETED MATCH NUMB ER TIGHE

1848 PRINT'TAB(18) PLAYERS PI CKED TIPICK

1858 PRINT'IAB(18) PRESS SPAC E BART: REPEATUNT (LGET: CLS: ENOP

1060 DEFPROCHATCH

1070 HS=0:AS=0:PS=5:1=0

1880 VOU 19,0,4;0;19,1,7;0;12 1090 PRINITAB(1,1)" **** FOOTB ALL LEAGUE DIVISION ":D;"++++4

1100 PRINTEAB(7,3)YS" "; HS;" "0PPS" "; AS

1110 PRINTTAB(15,20)**fine "; T;"*":SOUND1,1,-1,1:NOW2=TIME: REPEATURE LIGHE = NOWZ + 25

1128 CR=INT(2588*RND(1)+1)

1130 IF CH=1212 OR CH=1232 DR CH=1322 OR CH=987 OR CH=2211

OR CH=345 THEN 1398

1148 IF CH=1242 OR CH=1252 OR CH=1321 OR CH=986 OR CH=2111

OR CH=344 THEN 1478 1150 IF OPPAVE CT AND CH < 120 THEN 1398

1168 IF OPPAVE+2<CT AND CH<90 THEN 1390

1178 IF PECK<TT AND CH<290 TH EN 1470

1188 IF OPPAVE+3<CT AND CH<85 THEN 1398

1198 IF CT<DPPAVE AND CH<128 丁州亚州 147個

1200 EF CT+2<OPPAVE AND CH<13 D THEN 1470

1210 IF CT+3<0PPAVE AND CH<98 THEN 1478

1228 IF b=1 AND CR>2478 THEN 1470

1230 IF CH<40 AND AS=0 THEN 1 478

1248 IF MOR>76 AND CH>2349 TH EN 1390

1250 IF MOR> 62 AND CH>2359 TH EN 1370 1240 IF MOR<39 AND CH>2379 TH

1270 II MOR 29 AND CH>2369 TH EN 1478

EN 1478

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1280 IF MOR< 19 AND CH>2349 TH

EN 1470 1298 T=T+1:JF F=31 THEN 1328

1300 IF T=61 THEN 1330

1310 GOTO 1100 1328 PRINTTABC12,22) HALF TIM E "; HS;" : "; AS: NOW1=TIME: REPE ATUNTILITME=NOWZ+330:PRINTTAGE 18.221

":GOIDIIGE

1538 IF T=61 PRINTTAB(12,22) FULL TIME ";HS;" : ";AS:NOWE=T THE: REPEATURALLTIME = NOV2+330:C

1348 IF HS=AS MON=MON+2888:MO 泉=飯の東+1

1350 IF HS>AS MON=MON+6000:MO 图=例0图84.5 1360 1F HS<AS MON-MON-1900: NO

页=售0日-4.5

1370 ENDPROC 1380 FF=1MT(10+RWD(1)+1):1F F FES THEM 1188

1390 SOUND 8,3,-2,3:SOUND8,4, -4,2:SOUNDD,2.-3,1:NOW2=TIME:D EPEATUNTTETIME=NOWZ+100:SOUNDO ,3,-1,2

1400 PL=1NT(15+RNG(1)+1):1F S

TS(PL)<>'p' THEN 1488 1618 6[PL]=6(PL)+1:503=505[PL

1428 TT=[NT(18*RND(13*1);[F 1 1=5 OR TT=3 SCRS="(Pen)" 61\$6 SCRIE" "

1430 PRINTTABOT, PS) SCS; SCRS "; T; " Rins"

1448 HS=HS+1

1450 PS=PS+1 1460 6010 1100 1478 FF=1NT(7*RND(1)*1):1F FF =4 THEN 1100 1488 AS=AS+1:50UND 0,3,-4,5:5 OUNDE,2,-1,3:60101100 1498 DEFPROCRESULTS 1500 1F D=1 R1\$(1)=Y\$:A1\$(1)= QPPS:RH(1)=HS:RA(1)=A5:A5(1)=* *": A\$ (OPP) ="*" 1518 IF 0=2 R25(1)=Y3:A25(1)= OPPS:RHH(1)=HS:RAA(1)=A5:BS(1) =""":B\$(@PP)="#" 1528 X=1:18 0=1 X=X+1 1538 NN=INT(18*RN9(1)+1) 1540 IF AS(NN)="+" THEN 1530 1550 MA=1N1(18*RND(1)+1) 1560 1F AS(NA)="+" THEN 1550 1578 IF NN=NA THEN 1538 1580 R15(X)=A5(NN):A15(X)=A5(NA) : A 5 (NN) = "+"; A 5 (NA) = "+" 1598 X=X+1: [F X>5 THEN 1680 E LSE 1530 1688 X=1:18 b=2 X=X+1 161B MM=187(78*RMS(1)+1) 1620 IF BE(NN)="+" THEN 1610 1638 MA=ENT(10+RND(1)+1) 1648 IF BS(NA)="+" THEN 1638 1650 IF NN=NA THEN 1618 1660 R2S(X)=BS(NN):A2S(X)=BS(NA);85(NA)="*";8\$(NA)="*" 1670 X=X+1:EF X>5 THEN 1680 E LSE 1610 1880 X=T:REPEAT 1698 AS(X)=AAS(X):95(X)=99\$(X D:X=X:1:UNTILX>YE 1780 X=7 1718 RH(X)=1NICS+RND(1)):RA(X 3*6) TMI=(K) AAS;(CT) GMS+6) TMI=(ND(1)):RHH(X)=ENT(6*RND(T)) 1728 IF D=1 AND X=1 RH(1)=95: RACT)=AS 1730 IF D=2 AND X=1 RHH(1) = HS : 使具有[1]=AS 1748 X=X+1:16 X>5 THEN 1758 E LSE 1710 1750 8=1 1760 N=1 1778 IF R15(N)=A5(X) OR A15(N)=AS(X) THEN 1780 ELSEN=N+1:60 101778 1788 IF RIS(N)=AS(X) AND RH(H)>RA(N) A(X)=A(X)+3 1790 IF RISCHI-ASCR) AND RHOK)=RA(N) A(X)=A(X)+1 1888 IF A1\$(N)=A\$(X) AND RH(N TRIB [F AIS(N)=AS(X) AND BHIN J < RA(N) + A(X) = A(X) + 31828 x=X+1:13 X>10 THEN GOTO \$830:ELSE GOTO 1760 1838 X=1 1840 N=1 1850 IF R2S(N)=BS(X) OR AZS(N)=85(X) THEN 1868 ELSE N=N+8:G OTOTASA 1860 IF #23(N)=BS(X) AND RHK(M)>RAM(M) B(X)=B(X)+3 1870 IF RES(W)=BS(X) AND RHHC M)=RAN(W) B(X)=B(X)+1 1888 IF AZS(N)=BS(X) AND RMM(N)=R44(N) B(N)=B(N)+1 1898 IF A25(N)=85(N) AND RHH! N) < RAA(N) = 0(X) = 0(X) + 31988 X=X+1:8F X>10 THEN 1910 ELSE 1848 2148 X=X+1:1F X>10 THEN 2150 1918 Vou 19,0,1;0;19,1,7;0;:E ELSE 2130 LS: PRINTIAB(10,2)"*** RESULTS 2150 MAX=MAX-1: IF MAX<B THEN ***"T49(12)"DIVESION 1"

Man City Division 2
layer.....Skill.Worth..Goals.pdfi
Southell 6 £6888 8 p
Stevens 9 £9888 8 p
Sansom 6 £6888 8 p
Ratcliffe 2 £2888 8 p
Ratcliffe 1 £1888 8 p
Reid 1 £1888 8 p
Rix 4 £4888 8 p
Hoddle 8 £8888 8 p
Hoddle 8 £8888 8 p
Hoddle 9 £5888 8 p
Hoddle 9 £5888 8 p
Hoddle 9 £5888 8 p
Chapman 3 £3888 8 p Man City Di Player....S N.Southell G.Stevens K.Sansom K.Ratcliffe D.Mountfield P.Reid G.Rix G.Hoddle M.Hately D.Oldacre A.Oldacre P.Bracewell Ho. 14 15 Players Picked 11

p=Picked,d=Dropped,i=injured,f≡Fit

1920 I=1 1930 PRINT 1948 PRINTTAG(3)R1s(x)TAG(16) ; RH(X); TAB(19) A1\$(X) TAB(35); RA (X):SOUND1,1,-1,1:NOWX=TIME:RE PEATUNTILTIME=NOWX+185:PRINT:X =X+1:1F X>5 THEN 1958 ELSE1948 1950 PRINT'TAB(3) PRESS SPACE BAR FOR DIVISION 2": REPEATUNT ILINKEY(-99): VOU 19,0,0;0;0;0;19 ,1,3,0;0;:ELS:PR[NITAB(10,2)** ** RESULTS ***"TAB(12) 01VIS 10% 2" 1968 X=1 1970 PAINT 1988 PRINTTAB(3) R2\$(X) TAG(16) ;R9H(X);TA9(19)A2\$(X)TAB(35);R AA(x):SOUND1,1,-1,1:NOW%=13ME: REPEATUNTILTIME = NOWE + 185: PRINT : x=x+1:1F x>5 THEN 1998 ELSE 1 1990 PRINT: PRINTTAB(3) PRESS SPACE BAR FOR LEAGUE TABLES": R EPEATUNTILINKET(-99):ENDPROC 2000 DEFPROCTABLES 2010 VOU 19,0,4;0;19,1,7;0;:C LS:PRINTIAB(5,4) Football Leag ue Division One . "TAB(\$)"Pos. SESE BELKE. 2030 MAX=3+6ME:PP=8 5848 X=1 2050 IF ACKD=MAK PRINTTAB(6); PP+1; TAB(10)A\$(X)TAB(28); GME; T AB(33); A(X): SGUND1, 1,-1, 1:PP=P P+1:IF GME=9 RS(PP)=AS(X) 2000 X=X+1:1F X>10 THEN 2070 ELSE 2050 2070 MAXERAX-1: OF MAXER THEN 5888 ETZE 5018 PRESS SPACE B 2080 PRINT" AR FOR DIVESION TWO" 2090 REPEATUNT CLINKEY (-99): VD u 19,8,1;0;19,1,7,8;0;:CLS:PRI WITAB(5,4) Football League Div isian Two.. TAB(5) Pos.. TeamsPld..Pts" ZIDE MAX=3+GME: PP=0 211B PRINT' 2120 K=1 2130 IF BIX) = MAX PRINTTABLED; PP+1;TAB(10)9\$(X)1AB(28);GME;T AB(33); B(X): SOUND), 1,-1,1: PP=P P+1:1F GME=9 PS(PP)=B\$(X)

PICK A PLAYER OR RETURN TO PLAY? 2160 ELSE 2120 2168 PRINT: PRINTTAB(2) PRESS SPACE BAR FOR TRANSFER MARKET" :REPEATUNTILINKEY(-99):ELS:END PROC 2970 DESPROCHARKET 2180 PL=DNT(3E+2ND(1)+1):IF T F\$(PL)="+" THEN GOTO 2188 2198 *FX21 2200 VDU19, 0,4;0;19,1,3;0;12: PRINTTAB(18,5)":TRANSFER MARKE TATTAB(18)*CLUB FUNDS £";MON "TAB(10)"PLAYER "FFS(PL)"TAB (10) SKILL "RAT (PL)" TAB(10) "F ORNER CLUB "FCS(FL)"TAB(10)"W ANT EWAGE(PL)"TAB(10)"IMPUT OFFER ":: INPUTO 2218 WT=WAGE(X)+1NT(3888*RND(A=220:(1+(1)dMR+888857N1-(1+(1 \$(1NT(10*RND(1)+10) 2228 IF D=B ENDPROC 2230 IF OCHT PRINT" BID ES REFUSED"TAB(2)OTS" SIGN HIM U P": FCS(PL) = OTS: SOUNDB, 4, -3,8:N ONSERTME: REPEATUNTILITY OF STANDARS 400:ENDPROC 2248 If 0>=WT PRINT" 810 ES ACCEPTED, WELL DONE!!!":MON =MON-0:\$9=\$9+1 225B K=1:REPEAT 2260 JF SQ\$(X) = " +" SQ\$(X)=TF\$ (PL):TR(X)=RAT(PL):WGE(X)=WAGE (PL):G(X)=0:STS(X)="f":60T0 22 86 2278 x=x+1:6010 2268 2288 f(\$(PL)="":TF\$(PL)="+"; WAGE(PL)=0:RAT(PL)=0 2298 NONETTIME: REPEATUNTILITIM E=NONZ+300 2300 ENDPROC 231B DEFPROCSELL 2328 YOU 19,8,1;8;19,1,7;8;cC LS:PEINTTAB(10,5)***CLUB OFFE Rete. 2338 LET (LB=ENT(28+RND(1)+1) : EF CLB<11 THEN CLBS=AS(CLB)(E LSE CLBS=8\$(CLB-18) 2348 SF CLBS=YS THEN 2338 2350 NO=INT(15+RND(1)+1):1F S QS(ND)="4" THEN 2358 2360 WE=WGE(NO)+ENT(3000+AND) 1)+1)-1NT(2000*RNO(1)+1) 2370 IF VE<800 THEN 2360 2380 ± FX21 2398 PRINTTAB(18) (185 TAB(18) "HAVE OFFERED E"; WE"TAB(10);" FOR "SWS(NO)"TAB(TB) WHO IS S

KILL "; TR(NO)"TAB(180"AND WOR TH ["; WGE(NO)"TAB(10)"DO YOU ACCEPT';: INPUTOS: IF OS<>"Y" EN BPROE ELSE 2400 24個個 X=1 2418 [F TFS(X)='** TFS(X)=S9\$ (NO):RAT(X)=TR(NO):WAGE(X)=WGE (NO): FCS(X)=CLBS:60T0 2438 2428 X=X+1:1F X>38 THEN 2438 ELSE 2418 2430 59=50-1; [f 57\$(NO)="p" P 10K=P1CK-1 2448 MON=MON+WE: SOS[NO]="*":W GE(NO)=0:TR(NO)=0:G(NO)=0:57\$(NO) = . . 245B PRINT'TAB(5) YOU HAVE SO LD BEM TO"TAB(14); CLBS: NDWZ=T IME:REPEATUNTIET!ME=NOWX+35B:E 2468 DEFPROCENJ 2478 ENJ=1NT(5*RND(1)) 248B FOR X=1 TO 15 249B 1F \$T\$(X)="i" 5T\$(X)="i" 25RB MEXT 2518 %=1:REPEAT 2520 N=1NT(15*RND(1)*1) 2538 OF \$45(N)='* THEN 2528 2548 IF STSIN) = "p" PICK = PICK -255B STS(N)="i":X=X+1:UNT(LX> INA 2560 ENOPROC 2578 DEFPROCEUP S280 IL IN2 .. D. ENDEROC 2590 400 19,0,4;0;19,1,3;0;:0 LS: SOUNCE, 4, -5, 2: SOUNCE; 4, -2, 5 :sound1,1,-1,2 2588 IF GME=Z PRINTTAB(1,1)" ****** THE FA CUP FIRST ROUNDER 医食物皮肤肉瘤 化 2618 IF GME 4 PRINTTAB(1,1)"+ ******* FA CUP SECOND ROUND* 大大力力有工作的方 2628 IF GME=6 PRINTTAB(1,1)". ******THE FA CUP THIRD ROUNDAY ******* 2630 IF GME=7 PRINTTAB(1,1)'* ****** CUP SEMI-FIRAL DRAW** 计分子的由语语语" 2660 IF 0=2 [0\$(11)="0" ELSE 10\$(1)#"0" 2650 CLB=1NT(20*RND(11+1):1F 10\$((LB)="0" OR (UP\$((LB)=Y\$ 1 HEN 5658 2660 CLB\$=(UP\$(CLB) 2670 PRINT'TAB(7)YS" V "CLB S""TAB(7) PRESS SPACE BAR FOR RESULT : REPEATUNT CLGET: CLS :HS=34T(6*RND(1)):AS=[NT(5*RND (1)):PRINTTABCIB,SI'A++ FA CUP RESULT *** 2680 PRINTTAB(10) YSTAB(26); HS :SOUNDB,4,-4, P:NOWI=TIME: REPEA TUNTILIBME=NOWI+348; PRINT'TAB 10)CLB\$TAB(26);AS 2698 NOWE = TIME: REPEATURT ELTIM E=KOWX + 240 2788 IF HS<AS AND GME=7 SFS=C UPS((LB) 2718 SOUNDE,4,-3,4:1F HS>AS P RINT-TAB(18) TOU ARE THROUGH! !!":SOUNO1,1,-1,1:SOUND0,4,-3, 2:50UNDB,7,-6,1:MON=MON+3480:M OR=MOR+3: COS(CLB)="0": NONX=TIM E:REPEATUNTILTIME=NOW2+340:END PROC 2728 SOUNDE, 4, -3, 4: IF HS<AS P

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Towers of Hanoi



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ODD MAN OUT

Find the word that does not fit before your time runs out

TO ORDER TURN TO THE FORM ON PAGE 53

SuperBoss listing

From Page 35

RINT TAB(10) YOU ARE OUT OF THE CUP!! SOUNDB, 3, -4,5: MON=MON+900: MOR=MOR-1: INS="0": NOWE=TIME: REPEATUNT: LTIME=NOWE+340: ENDPROC

2730 SOUNDO,4,-3,4:16 HS=AS P RINT"MATCH DRAWN PRESS SPACE BAR FOR REPLAY":REPEATUNTILGE T:(LS:PRINTTAB(10,5)"+FA CUP R EPLAY*":GOTO2670

2748 DEFPROCFINAL

2758 VDU 19,8,4;8;19,1,7;8;:C LS:PRINTTAB(18,5)**** FA CUP E

2768 E=1NT(20*RND(1)*1):F=INT (20*AND(1)*1)

2778 IF E=F OR CMP\$(E)=T\$ OR CMP\$(F)=T\$ OR 10 \$(F)=T0" OF 10

2780 (FS(1)=CUP\$(E):CFS(2)=CU PS(E)

2790 IF ENS='[' CFS(1)=YS 2800 IF SFS<>' CFS(2)=SFS 2810 IF CFS(1)=CFS(2) THEN 27

60
2828 PRINTIAB(18,18)(F\$(1)'
V 'CES(2)'"'TAB(18)'PRESS S
PACE BAR FOR MATCH': REPEATUNT!
LGET: CLS: PRINTIAB(18,5)'* WEMBL

EY CUP FINAL "

2838 MS=8:AS=8:T=8
2848 PRINTTAB(18,9);CFS(1);TA
8(27,9);HS:PRINTTAB(18,14);CFS
(2);TAB(27,14);AS:PRINTTAB(12,
17);**TIME ";T;**:SOUND1,1,-1
,1:NOW2=TIME:REPEATUNTILTIME=N
OWX*75

2850 CH=INT(165*RND(1)*1) 2860 IF CH=37 OR CH=47 OR CH= 57 OR CH=67 OR CH=11 HS=H5+1:5 0UN00,8,-8,7:SDUN00,2,-3,2

2870 [F CH=97 OR CH=17 OR CH= 55 OR CH=60 OR CH=14 AS=A5+1:S OUMD0,8,-8,7:SOUND0,2,-3,2 2880 T=T+1:1F T=31 PRINTTAB(1

2889 T=T+1:1F T=31 PRINTFAB(1 2,20)***HALF-TIME***:50UND0,4, -4,4:NOWE=TIME:REPEATUNTSLITME =MOWE+300:PRENTTAB(12,20)

1:60T0 2848

2890 1F T=61 PRINTTAB(12,20)*
FULL-TIME*:SOUNDB,4,-4,4:N
OWR=T3ME:REPEATUNTILTIRE*NOWR*
300:60TO 2910

2900 6010 2840

2910 NOWR=TIME:REPEATUNTILTIM E=NOWI+240

2920 IF HS>AS AND CF\$(1)=YS M OR=MOR+6:MON=MON=15000

2930 [f H5>AS CWS=CFS(1) 2940 [f H5<A5 CWS=CFS(2)

2950 IF HS=AS PRINT" PRESS S
PACE FOR FOR SUP FINAL REPLAY"
:REPEATUNTILEST:CLS:PRINTTABGT
0,5)"*CUP FINAL REPLAY*":GOT
0 2820

2968 (LS:FOR X=1 TO 23:PRINTT AB(B); CMS; Won The FA Cup!':S OUNDB,3,-3,3:NEXTX

2978 NOWS-TIME: REPEATENTILISM E-WOWT - 588: ENDPROC

2988 DEFPROCEND

299@ CLS

3000 LC5=R\$(1):8U5=R\$(2):5S=P \$(1):8S5=P\$(2)

3010 PRINTTABET,7) CHAMPIONS

3020 PRINTTAB(1,9) RUNNERS UP

; RUS 3030 PRINTTAB(1,11) CUP WINNE

RS "; CWS TORREST STOPPONDTES

3040 PRINTTAB(1,13) PROMOTED ;55 TAB(11);55\$

3058 FS=RS(P):TTS=RS(10):RS(9):PS(1):RS(10):PS(2):PS(1):TS: PS(2):TTS

3060 for X=1 10 10:AS(X)=RS(X):BS(X)=PS(X):NEXT

3070 FOR X=1 TO 10:AAS(X)=AS(X):88S(X)=8S(X):NEXT

3088 X=1

3090 (F AS(X)=YS TS=AS(1):AS(
1)=YS:AS(X)=TS:D=1:GOTO 3118
3108 x=x+1:0F x>10 THEN 3110
ELSE 3090

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3120 1F BS(X)=YS TS=BS(1):BS(1)=YS:BS(X)=TS:0=2:GOTO 3140 3130 X=X=1:IF K>10 THEM 3140 ELSE 3120

3148 FOR K=1 TO 18:CUPS(X)+AS (X):CUPS(X+18)=BS(X):NEXT

3150 FOR X=1 TO 30:RAT(X)=1NF (10+RND(1)+1):WASE(X)=BAT(X)+1 800:NEX1

3168 PRINT" PRESS SPACE BA R TO CONTINUE.... : REPEATUNTIL GET

3178 for X=1 To 15; IF SQS(X) < >*** THEN TR(X)=ENT(10*RND(1)*
1):W6E(X)=TR(X)*1000; G(X)=0; ST
S(X)=***

3188 NEXT

5110 X=1

3190 YOU 19,0,4;0;19,1,7;0;12 3200 PRINTTAB(71,1)**END OF 5 EASON**

3210 IF LCS=YS PRINT TAB(5)"*
YOU ARE LEAGUE (HAMPIONS*"
3220 IF RUS=YS PRINT TAB(5)"*
TOU ARE LEAGUE RUNNERS UP+"
3230 IF SS=YS PRINT TAB(5)"*Y

324B IF SS=YS PRINT TAB(5)"+Y OU ARE PROMOTED*"

OU ARE 2ND DIVISION CHAMPIONS*

3250 IF CWS=YS PRINT TAB(5)".
YOU WON THE FA CUP*"

3260 1F CWS=LCS PRINTTAB(5)"
*";LCS;" Wan the Double!":SOUN
DB,3,-2,3

3270 PRENT" PRESS SPACE BAR": REPEATUNTILGE!

3280 PICK=0

3290 *f121

SOURCE (1,18) CHAPTER STAND BEEC CLUBER (N/Y) GREEN THEN 380

3310 (L8=1NT(20*RND(1)+1):[F CUPS(CEB)=YS THEN 3310 ELSE 33 20

3320 PRINTTYOU WILL MANAGE "
(UPS(CLB) "NEXT SEASON"

3338 :F CLB>18 YS=8\$(CLB-18): TS=8\$(1):8\$(1)=Y\$:8\$(CLB-18)=T

3348 IF CLB<11 Y\$=A\$(CLB):Y\$= A\$(1);A\$(1)=Y\$:A\$(CLB)=i\$:0=1 3358 PRINT* DO YOU WISH TO CONT:NUE (Y/N)*;:INPUTQ\$ 3368 IF Q\$<>'N* AND Q\$<>'NO' THEN 288

3370 PRINT INSERT TAPE"

3380 5=0PEMBUT'FILE

3398 X=1:REPEAT

j400 if x

3418 IF X<16 PRINTAS,598(X):P HINTAS,TR(X):PRINTAS,WGE(X):PR INTAS,G(X):PRINTAS,STS(X)

3420 PRINTAS,TES(X):PRINTAS,F CS(X):PRINTAS,NAGE(X):PRINTAS, RAT(X)

3430 X=X+1:UNTILX>38

3440 PRINT+S,LCS:PRINT=S,CMS: PRINT+S,SQ:PRINT+S,MON:PRINT+S

,D:PRINTOS,YS 3450 CLOSEAS

3460 RUN

3470 DEFPROCLOAD

3480 SHOPENINTFILE"

3490 X=1:REPEAT

3500 19 X<11 [NPUT#S,A\$(X):[N PUT#S,B\$(X):[NPUT#S,AA\$(X):]NP UT#S,BB\$(X) 3510 16 X<16 [NPUT#S 503(X):1

3510 IF X<16 INPUT#S,50\$(X):1 MPUT#S,1R(X):1MPUT#S,WGE(X):1M PUT#S,G(X):1MPUT#S,5T\$(X)

3520 [NPUT#S,TFS(X):[NPUT#S,F CS(X):INPUT#S,WAGE(X):[NPUT#S, AAT(X)

3538 X=X+1:UNT1EX>30

3540 INPUT#S,ECS:INPUT#S,CWS: INPUT#S,SQ:INPUT#S,MON:INPUT#S ,0:INPUT#S,YS

3550 CLOSE#S

3568 ENDPROC

3578 DEFPROCFINANCE

3588 IF MON>8 ENDPROC

3590 IF MON<0 VOU 19,0,1;0;19 ,1,7;0;;CLS:PAINTTABC1,10)*THE CLUG IS IN THE RED YOU ARE SA

CRED!!"; NOWX=FIME; REPEATUNTILT IME=NOWX+400:RUN

3600 REM Relocate

3610 DX=FAGE-&E00: *7.

3620 *KEYO FORIX=PAGE TO TOP STEP4: !(:X-DX)=!1X:NEXT::(TOP-DX)=&FF00:PAGE=&E00:MOLD:MRUN:

3630 FX138,0,128

This listing is included in this month's cassette tape offer. See order form on Page 53.

MATCHFACTS OPPOSITION Newcastle AUERAGE SKILL 7

OUR AVERAGE 6
TEAM MORALE 45%
CLUB MONEY £41000
MATCH NUMBER 1
PLAYERS PICKED 11
PRESS SPACE BAR

Four new fields to conquer...

HOT news this month includes an announcement from Adventure Soft UK that it has just released four new adventures for the Electron.

The titles are Kayleth, Temple of Terror, Sword of the Samurai and Super Adventure. They are available at £7.99 each either direct from Adventure Soft or from your usual supplier.

I am also in receipt of an apology from Robico that their western adventure, Blazing Star, won't be available on general release until the beginning of May.

This is apparently due to

the high demand for the bargain priced Rick Hanson trilogy.

A pigeon from Essex tells me that May is also the time to look out for the new Shards adventure – a sequel to The Mystery of the Java Star. Sounds promising.

The new Lever/Jones extravaganza, Dodgy Geezers, has now been released by Melbourne House for the Electron. If you thought Hampstead and Terrormolinos were a good wheeze, try this!

My database of adventures for the Electron and BBC Micro is nearly completed and hopefully will be ready for publication very soon.

If any of you have last minute details about newlyformed adventure software companies please let me know quickly.

To continue with Sheila Beattie's idea of listing when help has been given for specific adventures, this month it is the turn of Wheel of Fortune.

The following back copies will furnish you with useful information: August, October, November and December 1985, January, February, April, May, June, July,



August, September and December 1986.

Now on to the promised special on Kansas City's The Ferryman Awaits.

I am grateful to Colin Rothery and Sheila Beattle for their routes around the game.

I am also deeply indebted to Bill Trevelyan for his most detailed solution of the adventure and explanation of its inner workings.

A hints program specially written by him for this adventure can be found on this month's tape and it's essential reading for anyone having difficulty.

Ferryman must be the most macabre and one of the most difficult adventures I have come across.

Its complexity is partly due to some obscure problems and a sneaking suspicion I have that it was originally much longer and was shortened for the Electron. Perhaps the author, John Nevins, can put me right on that one.

The verb list is an important tool as in Ferryman it is essential to give correctly worded instructions, otherwise odd things may happen. For instance try entering NORTH WEST (NW) in the Valley of the Shadow of Death!

It has about 90 evocatively described locations which on occasions give a chill of horror... "The smell of the air reminds you of places where mould grows on rotting flesh".

In other places the atmos-

BEGINNERS

Last month I began to explain some simple mapping procedures for text adventures. I further mentioned that the grid map – although the most widely used – comes undone when adventures do not follow logical routes.

An alternative is to produce a random mapping diagram. This is similar to a grid map in that it displays the adventure in a series of boxes and lines. The main dif-

ference is the random map usually drawn on plain paper and the room connections do not necessarily follow compass directions.

To make a random map draw a box or circle in the middle of a piece of paper and mark it as the starting point.

Now draw your connecting arrows to other locations in any direction which leads to a blank piece of paper. Follow compass directions only when convenient.

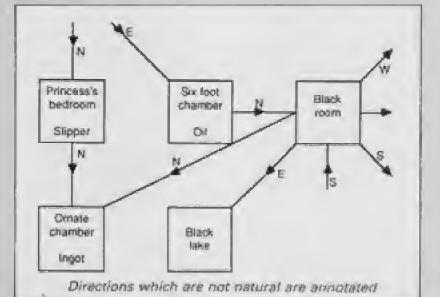
The insert in Micro Power's Adventure gives an example of a random map in use.

This method may require lines curving in directions which have no relation to compass locations and the finished result may look like something of which Pablo Picasso would be proud.

However a random map does enable you to come to terms with adventures which twist and turn in many directions, have confusing mazes or equally, like Sphinx Adventure, have a number of Up and Down routes.

Secondly, a random map will last much longer than its grid equivalent as it will not need re-writing as often—as those of you who have experimented with grid maps will have found out.

 Next month we will look at a non-pictorial approach to mapping.



phere is quite haunting...
"Towering above you is a stone tree, its roots dive into the rock and its trunk holds its vast branches high into the sunless sky".

There are also 30 interesting objects which perform a variety of peculiar functions.

Bill Trevelyan tells me that the adventure uses Page D, so it is best to disable your Plus 1 before CHAINing.

VERB LIST

ATTACK BURN BLOW CONSUME CLOSE DROP DOWN DESTROY DIG DRAW DRINK EAST EXAM-INE EAT GET HIT INVENT-ORY JUMP KILL LIST LOOK LEAP LOCK NORTH-EAST MURDER MEND NORTH NORTHWEST OPEN PULL PUSH PUT QUIT RES-TORE SOUTH SOUTHEAST SCREAM SHOUT SOUTHWEST SMASH SPIT SAY SHAKE SWALLOW SWIM TAKE THINK TUG UP UNLOCK WEST WAVE WAIT WEAR

Most of the above can be abbreviated to their first three letters. Noons will be discovered as the adventure progresses.

You begin the adventure as a ready made sacrifice: "You have been magically paralysed from the neck down . . . the Priest raises a small yellow stone above your head".

Your actions now must be quick and decisive: SAY NIMLAX – DOWN – PUSH PRIEST – DOWN – SOUTH – DOWN.

Here are some of the objects you will find:

Amulet: In the secret chamber west of the altar hall needed to work the horn.

Bar: With the rope – used first to ascend to tower roof from the temple, then to climb up gravel slope.

Chalk: Receive this from the old man in the stone tree in exchange for the rod. Use it to draw the pentagram.

Cube: Hallucinogenic drug – don't eat it, but a lick might defy time!

Door: The cell door is "Light but strong." It is useful as a bridge over the gap.

Fungus: Will be found growing on the dead guard's body. GET FUNGUS and drop it in the mud lake

Regent Gentlemens Hampstead gallery Street outfitters Business Map 3 Picadilly Cinama Toy Department department Circus. Furnique store department Screwdriver Estate Hamburger agents. West End Delighelui codage Bus stop Avoid dark places unless you want your pockets The Furniture Department is a better bet than the Station Art Gallery. It's now time to dress the part.

to eliminate the weed creature.

Horn: Use with the mouthpiece and amulet – SAY MOLD to be transported to the chamber.

Jerkin: Wear it to enter the pirate's cave.

Keg: In the storeroom. Exchange it for a lump of sticky tar in the pirate's cave.

Mirror: Found in the temple. EXAM MIRROR shows what you are.

Mouthpiece: At the mound. This is needed for the horn. Parrot: Carry the dead parrot when you visit the pirate's cave. (Shades of Monty Python, I think!)

Pie: It is poisoned. Eat for quick passage to the valley of the shadow of death,

Rags: You are wearing them. They may be exchanged for the robe or pirate garb.

Rod: Exchange for the chalk at the stone tree.

Spear: Left at the bridge. Throw it at the parrot. Sulphur: Yellow disc or slaying stone. Operated by SAY NIMLAX.

Sword: Given to you in exchange for the flint at the pool.

Tar: Given by the pirate in exchange for the keg.

Tricorn: To be found at the end of the passage. Must be worn to get the tar.

As with the opening sequence, in the final conflict it is essential that each action is carried out correctly and that no moves are wasted: N - DRAW PENTAGRAM - SMASH BOTTLE - THROW TAR - SAY NAGROGORGGA - SAY NIMLAX - KILL,

I hope I have left enough undone to still make Ferryman Awaits a challenge to the most seasoned campaigner.

KNIGHTS OF THE ROUND TABLE

Don't forget that if you write to one of my knights for help please enclose a stamped addressed envelope.

Kneel and rise Sir Mike Thomas of 64, Brynau Road, Castle Park, Caerphilly, Mid Glamorgan, South Wales, CF8 1PG, who offers help with: Adventureland, Pirate Adventure, Secret Mission, Voodoo Castle, The Count, Strange Odyssey, Mystery Fun House, Pyramid of Doom, Ghost Town, Savage Islands 1 & 2, Sorcerer of Claymorgue Castle, Spiderman, The Hulk, Quest Probe 3, Gremlins, Golden Baton, Time Machine, Arrow of Death 1, Escape from Pulsar 7, Robin of Sherwood, Perseus and Andromeda and Rebel Planet — do you own shares in Adventure Soft UK, Mike?

He can also give assistance with: Crown Jewels, Sphinx Adventure, Rick Hanson, Project Thesius, Myorem, Wychwood, Countdown to Doom and Classic Adventure. LAST month we looked at the Plus 1's analogue port and discussed the function of each of the pins. Now we're going to move on and see how we can use it with a very simple project.

The easiest pins to use on the analogue port are the push button inputs P80 and PB1.

These allow us to connect any type of switch to the port and monitor whether it's on or off, closed or open. These inputs are normally connected to the fire buttons of joysticks.

Connect a switch to one of the push button inputs (either pin 13, PB0 or pin 10, PB1) and one of the digital ground pins 2, 3 or 6.

All the switch must do is connect the push button input to the digital ground which, you may remember from last month, is at 0 volts.

Figure I shows a simple switch. Although fairly primitive, this will do the job.

For a more professional look Tandy can supply a suitable switch — part number 275-1566. And a 15-way D type plug to fit the analogue port can be obtained from Maplin.

They are both very common components and you should not have any difficulty obtaining them.

The switch is a push-tomake, release-to-break type and is often found in things like doorbells.

Take care with the wiring and make sure there are no short circuits between any of the pins on the plug – often caused by splashes of solder connecting them together.

Having built the hardware we'll move on to the software.

At the heart of any interfacing project using the analogue port is the Basic ADVAL function or its machine code equivalent.

ADVAL is used like any

Now let's get interfacing...

Part III of the Plus I series by JOE PRITCHARD

other function. We can assign the value returned to a variable:

x=ADVAL(n)

or print it's value on the screen:

PRINT ADVAL(n)

The value of n, the argument of the function, controls what ADVAL does. Setting n equal to zero makes ADVAL read the state

of the push button inputs:

PRINT ADVAL(0)

detects whether either of the push button inputs are connected to 0V. In other words, the value returned reflects the status of the inputs to pins 10 and 13, PB1 and PB0 respectively.

Bit zero set indicates that switch PB0 is on or closed and bit one set indicates that switch PB1 is on or closed. The other bits should be ignored so it is best to AND the result with either 1 to find the status of bit zero or with 2 for bit 1, if the result is

10 REM Program (20 REPEAT 30 pressed=ADVAL(0) AND 2 40 IF pressed THEN PRINT 'D of ELSE PRINT 'Off' 50 UNTIL FALSE

Program I

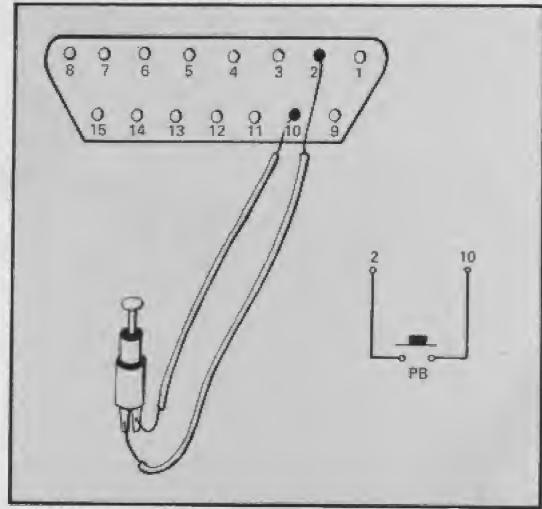


Figure I: Using the push button inputs

Hardware Projects

10REM Program 11	100REPEAT
ZØREPEAT	11098TIL FWbutton<>0
30PRINT Reaction Timer	120timex=FIME
Please press the	130PRINT Your time is: ";ST
APPRINT button when you he	RS(time2); centimeconds':PRIN
re the 'beep'."	T:PRINT:
58FX=RND(20)	148PRENT 'Press RETURN to pl
58FOR 12=1 TO FX+1000	ay again*
70KEXT	1588EPEAT UNTIL GET=13:PRINT
881F FNbutton<># THEN PRINT	TEBUNTAL FALSE
'OK wise guy, no cheating!!':	1700EFFNbutton=(ABYAL(B) AND
60TO 140	2)
9BTERE=0:YOU7	

Program II

zero the switch is off (open), if the result is non-zero the switch is on (closed).

Now we can test our simple circuit. Enter and run Program I.

Line 30 gets the status of push button 1 – bit one of ADVAL(0) by ANDing the value returned with 2. This will be one if PB1 is pressed or zero if it isn't.

Running the program and pressing the button will result in On or Off being printed on the screen.

Try replacing the push button with a silver foil strip switch as shown in Figure II — putting it across a door would make a simple burglar alarm.

Program II can be used to

time your reactions.

There are many other uses for the switch inputs; fire buttons on joysticks or games paddles and extra keys for the keyboard.

And if you put the switch on a cat flap you could even get your micro to tell you whether your cat is in or out. I'm sure you can think of many more applications.

 Try connecting a second switch to the other PB input and ground allowing two switch inputs. All the switch does is connect the PB input to digital ground.

 That just about wraps it up for now. Next month we'll see how to use the four analogue inputs.

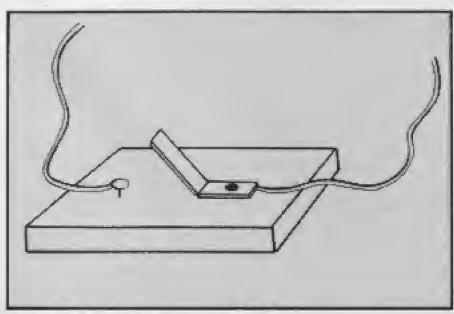


Figure II: A simple home-made switch

Soldering on . . .

USE a good soldering iron. This should be a 10 to 15 watt electrical device – heavy duty electrical soldering irons and the like are out unless you want a glob of molten plastic and metal where your circuit should be.

Soldering guns are also available and are perfectly ok, but a little expensive for the occasional user.

A small 15 watt iron is perfectly adequate and costs less than £10.

The iron needs a bit, which transfers heat to the joint to make. Get one that is quite narrow; 1/16th of an inch or thereabouts is best for fine work.

Solder is an alloy of lead and tin which melts at a relatively low temperature (160-240 degrees Celsius).

You should use resin cored solder which contains a chemical to make the solder flow properly when heated. The thick bar solder used by plumbers is not suitable.

Anything to be joined by soldering must be clean and grease free. Use fine emery paper or a scalpel to gently scrape the wires to be soldered clean.

Grease - easily delivered by grubby fingers - is probably the main problem to watch for.

The first time you use the iron, heat it up and get a slightly damp cloth. When hot wipe the bit with the cloth and then liberally coat the bit with solder until it's shiny all over.

Wipe off the excess solder with the cloth and repeat these two steps until the bit is shiny all over. This is called tinning the bit.

Any bare copper wires that you intend soldering should also be tinned in this way, though the leads of many components are already tinned.

Throughout the soldering process, the bit should be kept clean with the damp cloth.

Some components are very sensitive to heat so take care. I'll point out any delicate components that we use, but it's good practice to treat all components like this.

A good soldered joint should be shiny and smooth. If it's lumpy, dull, grainy or blobby, or any combination of these, then the joint must be redone.

Bad joints, apart from having a tendency to fall to bits, might not even conduct electricity.

Part seven of TREVOR ROBERT' down-to-earth series

Remarks about nothing

0

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STRANGE as it might sound there's a Basic command that's useful because it doesn't do anything. Or, rather, appears to do nothing.

It's the REM - REMark - statement which tells the Electron to ignore everything that appears after it and go on to the next line. Try entering:

10 REM This doesn't do anything

20 REM Neither does this

30 REM Yet REMs can be very important

and use RUN to run it. As you'll see nothing appears to

This is because each line starts with a REM. As soon as the Electron finds this keyword it ignores the rest of the line. 0

Hence the above program achieves nothing.

It may seem strange but having the REM command is very useful. For a start it enables us to label our programs clearly as in:

18 REM Program 1

28 aNumber=3

38 bNumber=4

40 product=aNumber*bNumber

50 PRINT "Product is ";product

Line 10 actually adds nothing to the program. When the Electron is told to run the code, it starts at line 10 finds the REM and goes on to line 20. The " Program I" after the REM is

However, ignored by the computer though it may be, it's very useful to us mere humans. Now we can refer to Program I and it's there, labelled for us to identify.

5 & REPEAT & MODE6: PROCtitle 15 M HODES: PROCStart 20 28 REPEAT: REPEAT



Some REMarkable facts

0

0

0

0

REM has a much more important role than just labelling bits of code. It's used to explain how they work. Take a look at Program II, neatly labelled with its initial REM statement:

18 BER Program II

20 aNumber=3

38 baumber=4

35 REM Multiply the numbers together

40 product=aNumber*bNumber

45 REM Print the result

Se PRINT 'Product is ': product

This is much the same as Program I but now two lines have been added, 35 and 45. These both begin with REM so they're ignored by the micro and hence have no effect on the way the computer executes the program.

So if they aren't used by the computer, why are lines 35 and 45 in the program?

The answer is that they're there to explain what the program does and how it does it. Compare Program I and Program II and decide for yourself which is easier to understand.

While our programs this far are so simple that they don't really need much in the way of explanatory REMs, get into the habit of using them.

You'll find that as your code gets more complex and needs altering or rewriting, well placed REMs can be a blessing.

They may not affect the program but they do make the programmer's life a lot easier. So use them to annotate your masterpieces.

Before we leave REMs, can you explain what happens when you change line 20 in Program II to:

20 REM aNumber=3

Re RENUMBER

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O

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TAKE a look at Program III and you'll see that it's just the same as Program II except for the fact that the lines have been renumbered:

10 REM Program [[]
20 aNumber=3
30 bNumber=4
40 REM Multiply the numbers together
50 product=aNumber+bNumber
60 REM Print the result
70 PRINT 'Product is 'sproduct

This was achieved using the RENUMBER command which we came across last month. As we saw then, RENUMBER takes the program in memory, gives its lowest line the number 10, the next the number 20 and so on up in tens.

So line 35 became line 40, 40 became 50, 45 became 60 and so on. Once this was done the REM of line 10 was changed – by the programmer, not by the RENUMBER – the Electron isn't that clever!

While RENUMBER on its own always has the program starting at line 10 with the line numbers going up in gaps of ten, it can be used another way. Type in:

RENUMBER 5,100

and (apart from the program number in the first REM changing) you'll see Program III turn into:

5 REM Program (V 105 aNumber=3 205 bNumber=4 305 REM Multiply the numbers together 405 product=aNumber*bNumber 505 REM Print the result 605 PRINT 'Product is ';product This happens because the RENUMBER command can be followed by two parameters (numbers to you and me), separated by commas.

The first parameter gives the line number you intend to be the first line of the renumbered program. The second tells the Electron the gap between the line numbers. In other words the RENUMBER command takes the form:

REMUMBER start, gag

Hence our:

RENUMBER 5,100

has the program beginning at line 5 with the line numbers going up in hundreds.

Should one or both of the parameters be left out then the micro assumes that you want the program to start at line 10 and go up in tens as usual.

Try your own versions of RENUMBER such as:

RENUMBER 7,23

:10

RENUMBER 4

and see what happens. Particularly interesting is:

RENUMBER 1888, 1888

The same but different

PROGRAM V uses the Electron to calculate the area of a rectangle of sides 10 and 5. Even without any explanatory REMs it's fairly obvious what's happening.

tB SEM Program V 20 Length=18 30 breadth=5 40 area=length*breadth 50 PRIKT 'The area is ';area

While in this case it's easy enough to do the calculation in your head, it's not always that way. Suppose length were 11,03 and breadth 6.97?

Not so simple is it? However we'll stick to easy numbers for the present and just pretend that we don't trust our mental arithmetic. We'll use the Electron to check it. Now with sides 15 and 7 it's easy to see that the calculation can be done with Program VI: 18 REM Program VI

20 length=15

30 breadth=7

40 area=Length+breadth

50 PRINT The area is 'parea

This is constructed from Program V by changing lines 20 and 30 to give length and breadth the new values.

If you think about it, the program itself hasn't really changed, just the values given to length and breadth. The rest of it stays the same.

Now suppose that you had a lot of area calculations to do. The Electron is made for the job, but it's a nuisance to have to keep changing the lines each time. There's a lot easier way of doing it, using the INPUT command shown in Program VII. More on this next time.

18 REM Program VII

20 INPUT length

30 [NPUT breadth

40 area=length*breadth

50 PRINT The area is "; area

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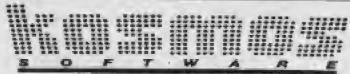
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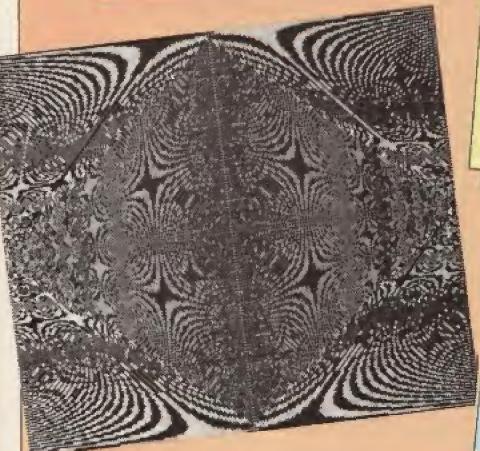
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Magicarpet





gram by Den Miller produces an impressive graphic display of a carpet with an intricate design. Select the mode to be used when asked then sit back and watch. When it's finished tap the spacebar to flip the colours for an alternative view.

REM Magicarpet
2 REM By Den Willer
3 MODES: INPUT: Which MODE
(1,2 or 5)"; MX: MODEMX: *FX16
4 VDU23; 8282; 8; 8; 8; :PROCAS
HIMEM DIV256: CALLOX
5 GEOLE 1.600

5 GCOLS, 1: FORGX=8701828STE P4: MOVER, 512: BRANGCE, GX: BRAW12 76, 512: NEXT

6 GCOL3, Z: FORGX=BTO656STEP 8: MOVE6X, 1828: DRAWB, 512: DRAW62 ,8: MOVE1276-62,0: DRAW1276, 512: DRAW1276-62,1820:NEXT
7 REPEAT: VOUT: A=GET: 7870=R
IMEM MOD256: 2871=HIMEM DIV256:
CALLOX: UNTIL FALSE

8 DEFPROCESSEMBLE DIMOX 18 8:FORGE=8102STEP2:PX=QX

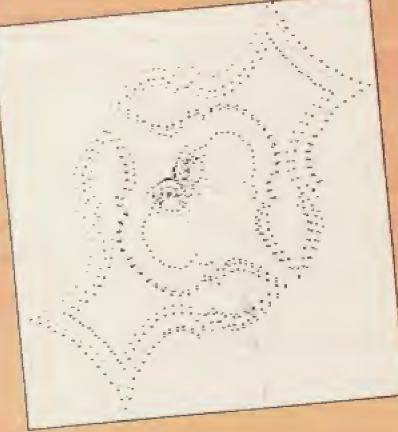
9 [OPTB:.loop LOY#B:LDA(&7 B),Y:EOR#&35:SIA(&7B),Y:IMY:LD A(&7B),Y:EOR#&AA:STA(&7B),Y:LO A&7B:CLE:ADC#2:STA&7B:LOA&71:A DC#B:STA&71:CMP#&8B:BNE(OOD:R7 S

18 7:NEXT: ENDPROC

Loggems

THIS interesting 10 liner from Geoff Stanton produces delicate butter-fly patterns. It is based on a mathematical formula using logarithms and requires three parameters to be input, x, y and the multiplier. Try x and y equal to 10 and the multiplier set to 0.1 to start with. Different values will give slightly different results.

| WOOE 6: IMPUT - Imput x(-1 8 to +183, K: INDAL, Tubnt h (-18 to +18) Y: INPUT Multiplier'A: 1FX18 #00E5: CX=1:1%=0 VDU19,3,6;8;29,668;512; REPEAT: 12=12+1 5 1F 12 MOD 188=8 CI=CI+1 e it crat crai 7 IF X=8 GR A=8 PRINTTRY NON-ZERO NUMBERS": RUN 8 GCOLB, CZ:PLOT69, X+5, Y+5 9 NX=18+(LOS(ABS(K+A))-INT (LOG(AB5(X*A))))-Y 18 NY=5-X:X=NX:Y=NY:UNTIL A 35(7.5)>512:ENO





You're on your own in Occupied France — facing the toughest test that a British pilot has ever had to experience!

DATABASE SOFTWARE

The year is 1943. As an RAF officer stranded in Occupied France you have one aim — to get back to Britain.

The only way to do this is to try to pass as a Frenchman, but if your French isn't good enough you risk capture and interrogation by the police or even the Gestapo.

Even the simplest tasks — from buying food to taking buses — place you at risk. And to add to your problems you've got limited funds: "Should I hitch a lift or take the train?", "Do I sell my belongings or get a job?"

Whatever you decide to do, time is short. And there are always people willing to denounce you . . .

French on the Run is that rare combination: A truly educational program that's also a thoroughly enjoyable game. This text adventure not only tests your grammar and vocabulary, but your knowledge of France and the French way of life.

And as your French improves the language problems get harder and the situations become progressively more dangerous. There are four routes to complete in sequence — you need the password from the last before attempting the next. The standard of French required is about O level, though on the last route it rises to just below A level.

And there's a chance for you to try out the French you'll learn in practice: We are offering a FREE WEEKEND IN PARIS as a prize to the first person to get back to England alive, having broken a code near the end of the final route.

For teachers: French on the Run uses multi-choice questions with randomised distractors, all carefully chosen to illustrate linguistic points or points concerning things French. The program is meant for individual assessment, but can be used just as effectively for classroom work. A sealed envelope contains details of how the secret passwords are created.

TO ORDER TURN TO THE FORM ON PAGE 53

Micro Messages

IN RESPONSE to D.J. Gormley's letter in the January 1987 issue of Electron User, I too have experienced tha weakness and slowness of Acornsoft's chess program and was no more impressed by MicroPower's version.

I had drawn the conclusion that the Electron was just too slow and inefficient in its hardware capability to play the game well, but now I have changed my mind.

Colossus 4 by Martin Bryant, available from CDS Software, is easily the strongest and fastest chass program available for the Electron.

Unfortunately it may be too strong for its own good, as even when taking 10 seconds on average per move it is capable of easily beating the flippant chess player.

It even plays a good endgame if given a little longer to consider its moves. - A.R. Lissamore, (Rushal Chess Club) Wednesfield, Wolverhampton.



D.J. Gormley should try White Knight Mkll from BBC Software for a fast and reasonable game of chess.

At present, only a cassette

The Grand Master of chess programs

version is available, but if enough of us write in perhaps we will be rewarded with a 3.5in disc version.

The address is BBC Software, 35 Marylebone High Street, London W1M 4AA. – B.P. Turnbull, Old Basing, Hamps.

No joy from sticks

I HAVE just bought Strike Control joysticks to use with my Acorn Electron using a Plus 1 interface.

To the whole family's great disappointment we have discovered we can use the joysticks with very few games.

Some ask for the joystick address. How do I discover this information? It isn't with any literature supplied with the joystick or with the Plus 1.

With other games the fire

button operates but the direction control does not function. Could you please give me some help as to how I can put this product to some better use?

I have returned them to the supplier, whose response was that the Electron was not designed for using joysticks and the Plus 1 was not a good interface.

I was left with the impression that I had a problem that had no solution and
had bought a product that I
could not use. Is this true? I
anxiously await your
response. — Roger Newtim,
Oxton, Birkenhead, Merseyside.

The Plus 1 is an excellent interface and absolutely essential if you intend expanding your Electron further.

However, there are a couple of problems concerning joysticks. The first is that there is a lot of software around that simply isn't designed to be used with them. And Acorn was rather slow off the mark in producing the Plus 1 and several other companies managed to get their own joystick interfaces on the market first.

Unfortunately, these use a completely different design and the two types are not compatible.

Some software companies, particularly Micro Power, wrote software speclically for the First Byte type of interface.

This required you to load a conversion program to a particular address halfway through loading the game.

Unfortunately, Plus 1 owners cannot use their joysticks with this type of software and must stick with the keyboard.

However, looking to the future, the situation can only improve. There are so many Plus 1s in use that software companies cannot afford to ignore it.

Any software released in the future that uses joysticks is more likely to be written for the Plus 1 than any other type. Some even work with both.

Mode 7 simulator in ram

AFTER reading the article in the January 1987 issue of Electron User concerning the impressive Mode 7 simulator, I thought I would enquire if it is possible to put this program into ACP's sideways ram and if it is, what modifications would need to be made to the program?

I have a Plus 3 and the program resides in the mamory required by the ADFS. So to use the Mode 7 simulator with any software I already have, this software would need to be loaded from tape as the ADFS would be disabled by the Mode 7 program.

Although I am one of the

original £200 Electron owners, I have not read your magazine from issue one because I used to think it was trivial and not worth the £1 cover price.

Instead I bought another magazine catering for all Acorn machines, but as more variations of the BBC Micro came out, less and less space in that magazine was concerned with the Electron.

I then looked at Electron User again and what an improvement! I have been so impressed that I have had to buy some back issues!

Finally, you'll be interested to know that I have not even had to tear myself away from the Electron keyboard to write this letter as it was written using View and printed on my superb GLP printer – a bargain at the last Electron and BBC Micro User show.

I shall read every issue of Electron User from now on. - P.J. Garrett, Potters Bar, Herts.

● You can put the Mode 7 simulator in sideways ram, however, it would not work as it stands. It may be possible to alter it but unfortunately large sections of complicated machine code would have to be rewritten requiring a lot of time and effort. The end result would not really justify it.

Software shortage

WE HAVE owned an Electron computer now for two years and find it a very good reliable machine.

The only problem we have come across is obtaining software in our area. W.H. Smith and Boots no longer stock any software at all, and Hobbyte only keep around a dozen titles.

I have tried shapping in

From Page 47

the surrounding towns, Watford and Luton but the result is the same. It seems software is only available by the means of mail order through companies advertising in Electron User.

What are your comments on this issue? Has any other reader found this problem? - T.A. Gammon, St. Albans, Herts.

It is true that there is a shortage of Electron software in the high street stores, yet literally hundreds. of titles are available through mail order, often at very low prices. We are just as puzzled as you!

More screens for Repton 3

I AM writing to you concerning Repton 3, as I'm sure I'm not the only one who has finished the 24 screens.

I have designed another 24 and was wondering if anyone else has done the same. If so could they send them to me on a C15 tape and I would be only too pleased to send them mine?

I have made the screens harder than the originals, including some new features. - Steve Gainham, 41 Somerville Road, Alrewas, Nr. Burton on Trent, Staffs. DE13 7EP.

Loading off discs

ONE DAY I was waiting for one of Superior Software's games to load and I thought how nice it would be if I could load them off 3.5in Plus 3 discs.

From the advertisements I see that they sell software for the Master Compact on 3.5in discs, so why not for the Electron? (They sell more Electron games on cassette than 88C games.)

Surely they could come up with 3.5in discs which hold both the Compact and Electron versions of the

WHAT would you like to see in future issues of Electron User?

What tips have you picked up that could help other readers?

Here 18 your opportunity to share your experiences.

Remember that these are the pages that you

write yourselves. So tear yourself away from your Electron keyboard and drop us a line.

The address is:

Micro Messages Electron User Europa House 68 Chester Road Hazel Grove Stockport SK7 5NY.

game/

As the Compact accepts double sided discs, why not have the Electron version on side 0 of the disc and the Compact version on side 17

This would save time because they would not have to put Electron games on a separate disc and would not really invoke any extra cost. So come on Superior, think about it.

Perhaps failing that they could put the Electron version on a different disc?

So come on Electron users, write to Superior and show them the demand is there. - S.M. Forrester. Sevenoaks, Kent.

 If demand keeps up Superior will shortly be producing software on Plus 3 disc for the Electron.

it's up to you to let Superior Software know there is a market for good quality disc software - and to support the company once it does take the plunge.

Tracked to source?

I OFTEN wonder where computer programmers get their ideas for top computer games. Well, concerning Ravenskull, (which is a brilliant game) I think I have the answer.

Superior Software is a Leeds based firm and I think they must have gone to the Leeds Bowl which is our bowling centre.

I often spend a lot of time on the arcade games and one of them is Gauntlet by

It seems to have all the same characteristics of Ravenskull. There is a

wizard, an elf and a warrior but instead of just an ordinary adventurer, there is a woman. There is also health, keys, potions and food.

I can only say that Ravenskull certainly has a lot more. - Michael Hughes, (Age 12) Bramhope, Leeds.



Easier sleigh ride

HERE ARE a few tips for those who are stuck on Santa's Sleigh (Electron. User December 1986).

You can have any number of lives by changing the value of live% in line 240 to the number of lives you want.

You can also start on any level by changing the value of stage% in line 240 to the level number you want.

I hope these changes help. - Simon Doyle. Taunton, Somerset.

Reading fire button

I HAVE an Electron, Plus 1 and Joystick. Eager to incorporate joystick control into my own programs I was scanning through some of your old issues of Electron User to see if I could find any help.

I found an article in your December 1985 issue that showed me how to move a little man left, right, up and down.

This was fine until I discovered that the article made no mention of how to detect when the fire buttons were pressed. Can you tell me how this is done? -James Grant, Sherborne. Dorset.

 Reading the fire buttons is: quite easy. If ADVAL(0) is zero neither button is pressed. If it is one, button one is pressed, two means button two and three means both buttons at the same

Here's a short program to démonstrate this:

10 HODE &

20 REPEAT

30 IF ADVAL(0)=0 THEN PRINT "No buttons pressed"

40 IF ADVAL(B)=1 THEN PRINT Button 1 is pressed"

50 IF ADVAL(0)=2 THEN PRINT Button 2 is pressed 60 IF ADVAL(0)=3 THEN PRINT

Both buttons are pressed 78 UNTIL FALSE

Printer driver poser

WHEN I had finished typing in the printer driver program that appeared in the August 1986 issue of Electron User I kept getting an error on line 150.

This began to annoy and frustrate me, so I decided to take the safest step and purchase your pre-recorded tape from that month's issue.

Christmas came and I received the word processor View from my wife as promised. After a few trial attempts at using it / decided to load the driver to see what it could do.

Then even more problems started. All I got was a full screen of white and the keyboard was disabled. This was very annoying as I had just spent £3.75 on the tape.

l have an Epson RX80 printer that seems to work very well with your excellent Mini Office.

l do hope you can help me with my problems as they seem to be really getting me

frustrated at the moment,

Please keep printing your excellent magazine as I find it a real help, as I am trying to master the excellent Electron. — Philip Storey, Droitwich, Worcs.

 The printer driver listing is correct and you simply made a typing error in line 260.

Always remember that your Electron is fallible and occasionally states that an error is in one line when in fact it's at a completely different one.

The tape version is also fine. Do not try to load it into View, it is a printer driver generator — it creates the printer driver when you load and run it using Basic.

The program created by the Basic listing should be loaded into View.

Straying off memory map

I HAVE frequently experienced problems when loading software from tape and suspect that programmers tend to stray from the recommended memory map utilising memory assigned to the Plus 1 interface.

I have discovered that typing in:

262AC=8

before loading has overcome the problem in all cases up to quite recently when I purchased The Last of the Free, Thunderstruck and Vindaloo.

These programs produce a new problem. In each case the computer locks at the point of loading the screen and in the cases of the first two programs produces a continuous tone until Break is pressed.

The programs load satisfactorily without the Plus 1 and Plus 3 unit attached. I find this totally frustrating. Can you help? — David Higham, Fulwood, Preston, Lancs.

 Some software will not load unless you totally disable the Plus 1 and Plus 3. If you have a Plus 3 type:

28014=89¢

and press Control+Break to

disable it. The Plus 1 is disabled with:

> *FX163,128,1 ?6212=406 ?6213=8F1 ?62AC=0

Do not press Break after entering this, just continue and load the software as normal. Always disable the Plus 3 first if you have both the Plus 3 and Plus 1.

Slipping standards

I FELT that I must write and complain about your January 1987 cover program, Grid Warrior.

There are a lot of people who rely on your normally excellent magazine for their "standards" in good programming technique. Grid Warrior contains some very poor examples, which people may assume are ok because they saw it in Electron User.

The GOTO 180 at the end of line 590 is in fact causing return from PROChuman, line 590 is reached via the GOTO 580 at the end of line 320.

On arrival at line 180 the poor Electron, now totally confused, objects to MODE 6 because it knows it is still in PROChuman,

To make matters worse, on invoking the ON ERROR in line 70, which really ends PROChuman, there is no REPORT as recommended in your 18 Commandments (Electron User March 1985), just another GOTO 180 which attempts to recover from the original blunder.

The same error is repeated by the GOTO at the end of line 600, although this in itself does not actually cause an error as no mode change is attempted.

It actually looks as though the procedures were an after-thought, as the GOTO 290 in line 610 is in fact never executed. These errors in an otherwise excellent game are not typical of Electron User and I would hope not to see such examples repeated. —

R.Hewett, Swanley, Kent.

You are right, the programming isn't the most elegant we've seen but as you say, the game is excellent.

Grid Warrior was not intended to be an article on good programming techniques, it is an arcade game that is great fun to play that everyone will enjoy.

We decided that the end result justified the means, though this isn't always the case and we do watch out for poor programming whenever possible.

Accent on games

I RECENTLY purchased an Electron and felt it was similar to the BBC Micro and might run programs written for the BBC Micro and indeed it does.

However, having subscribed to Electron User for some months now I am surprised to find that 90% of the programs are games or other things of little use to the serious user.

they will almost certainly be the result of your own typing mistakes.

Unfortunately we can no longer answer personal programming queries concerning these mistakes. Of course letters about suggested errors will be investigated without delay, but any replies found necessary will only appear in the mail pages,

I am a radio amateur, and would like to see programs of a more scientific nature now and again. What about a beam antenna program or perhaps some of the many RTTY or morse learners programs.

I am sure there must be many people with an engineering or electronic background who would really enjoy such programs

Perhaps even chemical formulae would be of interest, not forgetting weather predictions and so on.

In closing may I say that I do enjoy reading your magazine and feel it would increase its circulation if the above points were taken on board. — R.W.Hardie, Cockburnspath, Berwickshire, Scotland.

 Hardware Projects, a series for the more technically minded started in the January 1987 issue of Electron User.

This will show you how you can use your Electron and Plus 1 for simple control and sensing applications.

Another new series starts this month and kicks off by looking at word processing using Acornsoft's View. This is specifically aimed at the serious user, though we're not completely forgetting the fun side of the Electron and have some great arcade and educational games lined up

More room for reviews

RAVENSKULL is brilliant! I agree with everything your reviewer said. Although I have only managed to master 18% of the game, I would recommend it to anyone.

The brilliant graphics, scrolling and ingenuity reflect the dramatic rise in standard of Electron games, from good to better and then even better than that!

The only other thing I wish to add, is please, please could you print more software reviews as many good games go unnoticed, and this is a great shame.

Keep up the good work in 1987 and help show that the Electron is best. — Christian Savvides, Edgware, Middx

ning programs which have been thoroughly tested.
However on the very rare occasions that mistakes may occur corrections will be published as a matter of urgency.

Should you encounter

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you type in a program

ALL programs printed

in this issue are exact

reproduction of list-

ings taken from run-

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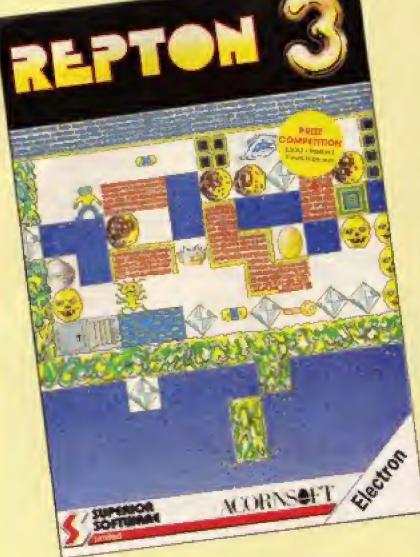
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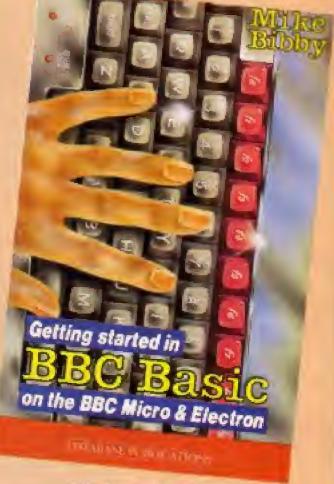
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Pork Drive Baldock . Herts . SG7 6EW Telephone (0462) 894410 CORRUPTION of data on discs and losing files accidentally with *WIPE or *DELETE are just two of the problems you can have with discs and disc filing systems.

Problems like these can be resolved using special utility roms and discs such as Advanced Computer Products' ADT.

However, for those without a suitable utility here is a simple program to help you out.

Elkzap is a disc sector editor and recover program for ACP's Plus 4 and Plus 3 owners with ACP's DFS rom or E00 DFS.

It will not work with the ADFS, but similar programs can be found in the March and April 1986 issues of Electron User.

For a complete guide to how data is stored on discs refer to the disc series which started in the August 1985 issue of Electron User.

Type in the program and save it, then get a disc which does not have anything important on it — a typing error could result in the pro-



gram causing rather than correcting disc corruption.

When you run Elkzap you will see a menu with five options.

The first allows you to select the track and sector to edit. Type in the track number, which can run from 0 to 39 for 40 track discs and 0 to 79 for 80 track discs. Then type in the sector number which is always 0 to 9.

Please note that if you are using an 80 track drive you will need to change line 520 to:

450 max.sectorš=10:max.track c=80

The program will then display the sector as a hex/ Ascii dump in Mode 3 and you can examine or edit it before copying it back to the

A simple disc editor and recover program By STEVE TURNBULL

disc.

The display is in two parts. The big block of numbers in the middle shows each of the 256 bytes of the sector as hexadecimal numbers.

On the right are the same bytes shown as Ascii characters if in the range 32 to 126, or as a full stop if less or greater than these values.

Figure I shows the display you'll get when editing a sector and Table I gives a list of the keys to use.

Control+I toggles between editing the hex or Ascii blocks and the cursor flashes beneath the character to be altered.

When editing the hexadecimal block use the cursor keys to move to the byte to be altered and simply type the two digits that you want.

Remember though you

can only use the hexadecimal digits 0 to 9 and A to F. Figure II shows what happens when entering a hexadecimal number.

When editing the Ascii display you can type any normal keyboard character and the cursor moves along automatically.

Pressing Copy writes the sector back to the disc and prompts you for the next, Return skips to the prompt and leaves the disc unaltered.

You can use the edit option to create protected discs with invisible catalogs by inserting character 21 (&15) at the start of the title string – byte 0, track 0 sector 0

With a little more experience you will be able to modify the catalogue to change the load address of a file, its execution address, its length or even where the DFS thinks the file starts on a disc.

Pressing Escape at any time returns you to the main menu.

The second option is to search the disc for a string, it is quite slow but very thorough and will find any string anywhere on the disc, even if it crosses over from one sector to the next.

When the string has been found the editor is entered with the cursor flashing at the start of the string.

The search option can be used to help you find lost files that have been accidentally deleted. If you always put the name of your program in a REM statement

Control+i Copy Return Toggles between hex and Ascli editing. Copies the sector back to the disc. Finishes editing, but doesn't alter the disc.

Cursor keys Moves the cursor.

Table I: The control keys

		Dis	is T ₫ .	9	III	IUN	Ť	S	euu	OL.	Đ					
99	91	82	03	84	05	96	97	88	89	88	98	80	80	8E	0F	
162 64 20 78 74 53 63 63 60 65 65	F1C9FFF565744582CD555	2785423F44C08898RE	274C273742AC9E55ED8	887226146F3DD4C552295E42	36543E29959982E255	2932B572BB4C4835DD9	748133DC4868245FRC40D	236223672236F25H4	3846BD2CA6D9F1104	38E22443365880886880011	5725262158429C688F	25030980578057805464E22	32272558C30DB8D538	B3665C33R9144CB884C33C	836622515H8D86D28	.''.2)t\$;:Y% .L*track=.num .Y%,"Irack".0 x_tracks).0- tor=.num(23,Y) Sector".0,max ctors)£.P%= .tnum(X%, .t\$,L%,H%)% X%,Y%)t\$"?"; H%;X%=.:Y%; H%;X%=.:Y%; H%;X%=.:Y%; H%;X%=.:Y%; H%;X%=.:Y%; H%;X%=.:Y%; H%;X%=.:Y%; H%;X%=.:Y%; H%;X%=.:Y%; H%;X%=.:Y%; H%;X%=.:Y%; H%;X%=.:Y%; H%;X%=.:Y%; H%;X%=.:Y%; H%;X%=.:Y%; H%;X%=.:Y%; H%;X%=.:Y%; H%;X%=.:Y%; K%;X%=.:X%; K%;X%=.:X%;X%=.:X%; K%;X%=.:X%;X%=.:X%; K%;X%=.:X%,X%=.:X%;X%=.:X%,X%=.



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April 1986

INVASION FORCE Exciting zap 'em space game. EASTER EGG HUNT Seasonal game using compass points. BACH TO BASICS Music tutor, NOTICE BOARD Text scrolling utility. SEARCH and RECOVER Two routines from the disc article. NOTEBOOK Recursion backwards.

March 1986

GRAND PRIX Exciting race game, DICER A clever test of strategy. MARCHING ORDER Counting and ordering numbers.
FIND AND REPLACE Useful editing program. SECTOR EDITOR Excellent disc utility. TIMEPIECE Superb graphics nonstration. UXU Game of cumino. TRICIRC A circle of triangles.

February 1986

NECROMANCER Superb text adventure. GREBIT Arcade action. FAST BACKUP Disc utility. MACHINE CODE How to write an arcade game. TAPEDISC More software transferring techniques. SIDEWAYS RAM Example program.

> To order, use the form on Page 53

From Page 55

at the start of the listing, like this:

18 REM Invaders

then you can search for the name Invaders using this option.

However, you can't search for Basic keywords because they are converted to single byte tokens. For instance REM gets converted to the single hex byte &F4.

When you have found the string you can go to the third menu option which will load as many sectors as possible into memory starting from the track and sector found.

Then an automatic OLD and LIST is performed to show you the Basic program that has been recovered. If after loading you get a Bad program error, type:

||TOP=&FF®0

to recover as much as possible and SAVE your program on a different disc. This does not guarantee a total rescue but will work on many lost

The fourth choice on the main menu simply allows you to change the disc drive that is being accessed. And the fifth is used to exit the program when you have finished.

When you have entered and saved Elkzap on to your utility disc try the following test: Save it again on to an unimportant disc and delete it with 'DELETE. Run the program, select the second option and search for ELK ZAP.

Eventually the program should come up with the sector containing this string, Exit using the Return key and select option three, Recover. The disc drive will run for a time, then if all is well the program will start to list.

One final warning: This program allows you to totally ruin your discs if used incorrectly so make sure you type it in carefully and practice on a disc which does not contain important data.

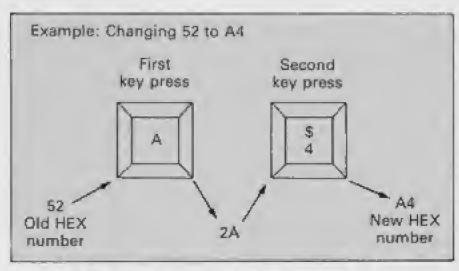


Figure II: Editing hexadecimal numbers

Elkzap listing

```
10 REM ---- ELK ZAP ----
   28 REM By Steve Turnbull
   30 REM (c) Electron User
   48 REM -----
   50 MODE 6:MOMEM=TOP+BERR
   60 ON ERROR PROCETT
   70 PRODigit
   BB ON ERROR PROCopde(6):PRO
terror
   98 REPEAT PRO(mode(6)
  180 PROCEM("*ELK 2AP*",1)
  110 PROCen('Main Menu', 2)
  120 PRINTTAB(9,5)"1. Edit a
sector"
  130 PRINTFASIPY'Z. Search to
r string
  148 PRINTTAB(9)'S. Recover d
eleted program'
 130 PRINTTAB(9)'4, Select or
  160 PRINTTAB(9)"5. Exit this
 program"
  178 PRINT"TAB(9)"Enter your
 choice d'a
  188 QX=FWin("12345")
  198 IF QT=1 PROCgettrack('Di
splay"):PROCdisplay
  200 (F 91=2 PROCsearch: If P%
<999 PROEdisplay
  218 OF 9X=3 PROCrescue
  228 IF Q%=4 drive=FNnum(P, VP
05+2, prive , 0,3)
  238 IF Qt=5 quit=TAVE
  240 UNTIL guit: PROCquit: END
  250 DEF PROCessor: PRoceaff
  260 IF ERR=17 ENDPROC
  278 ON ERROR OFF: PROCQUIS
  280 ber PRoterr: PRoteon
  290 REPORT: PRINT" at line ";
EAL: END
  300 DEF PROCende(ME)
 310 YDUZZ, MX: ENDPROC
 320 DEF PROEquit; CLS: PROCcon
18/84
 338 PROCCH("-- ELK ZAP --", 3
  348 PRINT': ENOPROC
```

350 DEF PROCinit: PROCeeff: +F

368 nums="8123456789":hexs=n

370 his="ABCDEFERSJKCHMOPORS

um\$+"ABCDEF"

```
SUVEXXXI.
  300 lo$='abcdefghijklmnapgrs
tuvvxya"
  398 puns="!"#st&"{}="1-"\@{
f[.**];;]<>?,./
  400 allS=hiS-loS+mumS+punS
  418 cs=CHRS&88+CHRS&89+CHRS&
BB+CHRSGSA
  420 copys=CHAS&87: rabs=CHRS9
:cr$=EMR$13
  430 quit=FALSE:corl=870:buft
er1=6888
  440 buffer?=ACOD:buffer3=6AD
  450 max_sectors=10:max_track
  468 drive=B:P%=999:ENDPROC
  470 DEF PROCEOFF: * FX201,1
  480 VOU23,1,0;0;0;0;:ENDPROC
  490 ber Processierx201,0
  500 YOU23,1,1;0;0;0;:ENDPROC
  518 DEF PROCen(t$, 12)
  52B LOCAL XX:XX=(40-LENCESP)
 This is one of hundreds of
 programs now available
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  538 PRINTIAGIXE, TT) ts;: ENCPR
  SAR DEF FRIn(ks): LOCAL 12:45
121
  558 PROCCOM: REPEAT 1%= INSTAC
ks, GETS)
 568 VOU-7+(1%=8):UNTILEX:PRO
Cooff:=1%
```

370 DEF PROCread(drive, track ,sector,buffer):W1=853 380 DEF PROCurite(drive, trac k,sector,buffer):WI=848 590 ctrl::0=drive:ctrl:1=buff 600 ctrl?6=WX:ctrl?7=track:e 618 ctrl?9=821:PROCefs(ctrl, 620 ENDPROE

entetri25=3

tri38=sector

698 PROCentibise Error!! , VP 0\$41) 700 PROCon("Press Space to c ontinue or Escape', VPOS+2) 710 IX=FNin(' '): ENDPROC 720 DEF PROEdisplay 730 REPEAT 748 PROfread(drive, track, set tor, buffer() 750 PROCmode(3) 760 PRINTTAB(15,2) Toisplay 778 PRINTIABI25,2) Track "; c rack 780 PAINTTAB(35,2) Sector "; sector 790 PADCscreen(buffer1) BBB PACCedit(FALSE,P1) B18 PROCENC'New Sector (Y/N) ?", 18) 820 new=fNin('TyAn')<3 830 If new PROCoode(6):PROCg ettrask("New sector") 848 UNTIL NOT new: ENDPROC 858 DEF PROCeettrack(1\$) 860 PRINT"TAB(2): \$5: YZ=VPOS 870 track=#Naum(15, T1, Track ",0,mai_tracks) 880 sector=FMnum(27,YI, Sect or',0, max_sectors) 890 PI=0: ENDPROC 900 DEF FANDMCKI, YX, t3, LI, HZ 910 PRINTTABUXX,YXXIS"? "; 920 LOCAL NX:XX=POS:XX=VPOS 930 REPEAT PROCEON 940 IMPUTTABLAX,YXINX:PROCCO 950 UNTIL MX>=LX AND MX<=HX; 968 DEF PROCecreen(Bt) 970 VDU28,0,24,79,5 980 CLS: LOCAL XX, YX 998 PRINTSPCIB;: FOR XX=0 TO

630 DEF PROCESS(Ct,et)

65B AT=67F:XT=62:YT=XX01V256

66B REPEAT RX=RX+1:CALL &FFF

578 UNTIL CEREZER OF REETS

688 BF CX?eX=8 EMBPRAC

648 LOCAL AX, XX, YX, XX

Elkzap listing

From Page 57

15 1000 PRINTFNhex(XX);:MEXT 1010 PRINT'SPC10STRING\$(47,"-1020 FOR YX=0 TO 255 STEP 16 1030 PRINTSPC6FNhex(YZ)"; 1848 FOR XX=8 TO 15 1850 PRINTFHHEX(BX?(XX+fI));: NEXT 1866 PRINT" ";:FOR XX=8 TO 1 1878 PRINTFNascii(827(X2+Y2)) 1888 PRINT: NEXT: ENDPROC TOPO DESSNAER (RE) = STRE "(HIDEV 16)+\$195"(HZMOD16)+"" 1100 DEFFNascii(AT) IF AT>31 t F AX<127 = CHRSAX ELSE ="." 1118 DEF P20Cedit(flag,PI) 1120 REPEAT 1138 PROCPLACE(TRUE):YOU31FNk (PI) FMy(PI) 1140 JF flag as=hexs ELSE as= 1150 is=c\$+copy8+cab5+cr\$+a\$ 1168 CX=FNin(is):PROCplace(FA LSE 1178 IF CE<5 PROChove(CE) 1188 1F (X=5 PRO(mode(6):PROC write(drive, track, sector, buffe 11)

1200 If C1>7 PROCchange(MIDSC fs, (t, 1)) 1218 UNTIL (X=5 OR CX=7:ENDPR ÓĊ 1220 DEF FN: (PX)PX=PXMOD14:1F flag THEN=10+P4+3 ELSE=60+P4 1230 DEF FMV(PY)=PZD1V16+2 1248 DEF PROCesove(CI) 1250 IF CX=1 PX=FNpos(-1) 1260 IF C1=2 PX=fMpos(*1) 1278 IF CI=3 PI=fNpos(-16) 1280 1F (1=4 P1=FNpos(+16) 1290 ENDPROC 1300 DEF FNpos(QT) 1318 GX=PX+GX: [F GX<B THEN =Q 1320 IF QX>255 THEN =QZ-256 E TRE =## 1330 DEF PROCehange(c\$): IF NO Tflag VX=ASCcS 1340 If flag VX=Chuffert?PX+T 6+INSTRINGUS,cs)-1)ANDEFF 1350 buffer1?PX=YX:GX=PX:IF N Offlag Q:=FMpos(+1) 1368 DEF PROtplace(IX):PROCco |our(11):91=91 1370 LOCAL YX, flag:YX=FNy(PX) 1380 PRINTTAB(FM)(PI), FI) FNas cii(buffer17PX); 1390 flag=NOTflag 1400 PRINTTAB(FMx(PX), YX) FNbe x(buffer19P1); 1418 PX=QX:ENDPROC 1424 DEF PROCeolour(IX)

1438 LOCAL FI, 81: FI=1:81=128 1448 IF IT FI=0:81=81+1 1450 COLOUR FX: COLOUR BX: ENDP 1468 DEF PROCSearch 1478 PROCeettrack ("Search fro 1480 PRINT"String: "; 1498 IX=POS:YX=VPOS:PADCcon 1500 REPEAT INPUTTABILLY TO 15 1510 UNTIL (\$>":\$buffer3=t5: 1520 Birbuffer3; JirLENSbuffer 153B REPEAT VX=VX+1 1548 PRINTTAB(11,20)'Searchin g ';drive':'; track':';sector 1558 PROGread(drive, track, sec tor, buffer 1): PROCincrem 1560 PROCread(drive, track, sec tor, buffer2):P%=999 1570 FOR TX=B TO 255: FOR LX=0 1580 If buffer1?(YX+LX)<>84?L 1 LX=999 1590 NEXT: IF LX#JX+1 PX+YI: YX 1600 WEXT: UNTIL PX<256 OR VX= mar_sectors*max_tracks 1618 IF PX<256 PROCESORS 1620 ENDPROC 1630 DEF PROCINCIEM 1640 sector=sector+1:1F secto r=max_sectors track=track+1:se

1650 If track=max_tracks trac 士二日 1668 ENGPROC 1670 DEF PROCEETER 1680 sector=sector=1:1F sector r=-1 sector=man_sectors=1:trac k=track=1 1698 IF track=-1 track=max_tr acks-1 1780 ENDPROC 1710 DEF PROCrescue 1728 PROCENCRESCUE in progre ss...", NPOS47) 1730 IF PX=999 PROCen('No Fra ck or Sector', VPOS+2): Il=FNin("):ENDPROC 1748 PX=(H1MEM+&1887ANDSEFBB 1758 FOR BY=PL TO \$5F00 STEP 1768 PRDCread(drive, track, sec tor, BT) 1778 PROCincrem: NEXT: *FX18 TYSE PAGE PA: *KETB MODES INOLE I MEEST I MEN' 1790 *FX138.0.128

This listing is included in this month's cassette tape offer. See order form on Page 53.

1800 PROCCOM: END

QUAL-SOFT

119B 1F CX=6 flag=NOTflag

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DEALER ENQUIRIES WELCOME

Hardware review

WHEN Acorn designed the Electron the aim was to produce a cut down BBC Micro and some of the most useful features were omitted in order to keep the cost down, including Mode 7, the serial interface, printer port and user port.

Most people don't miss the user port, but the lack of Mode 7 and printer port is a much more serious prob-

A Plus 1 adds a printer port, and software can be written to avoid Mode 7, but anyone wishing to use the Electron to control and sense the outside world is stuck — a user port is essential.

This is one of the reasons why the BBC Micro is widely used in schools and by electronics and radio enthusiasts who want to use their micros to control other electrical devices.

The Project Expansions user port is built into a rom cartridge and fits into the Plus 1. It sets out to provide Electron users with a port to match the one on the BBC Micro.

Before I go on to look at how well it does this, let's start at the beginning - what is a user port?

Simply put, it's a socket that allows you to pass electrical signals to the computer from external devices and vice versa.

The socket has 8 pins enabling 8 separate electrical signals to pass between the computer and external circuits at the same time. For this reason it's called an 8 bit port.

Both the BBC Micro user port and Project Expansion (PE) port are mapped into the main memory and are programmed by poking and peeking.

The PE port is addressed at memory locations &FCB0 to &FCBF. So the user port is treated as a byte of memory and can be written to and read from as if it were any other memory location.

The difference is that any bits that are set in a byte written to the user port will cause the relevant pin of the socket to carry a 5 volt signal.



And each zero bit written causes the relevant pin to carry a 0 volt signal. These signals can be used to control external devices.

Similarly, if we're reading a byte of data from the user port, a 5 volt input to any of the pins will be read as a 1 bit and a 0 volt signal as a 0 bit

Once you've got a user port the world of robotics electronic devices.

The PE user port uses the same Versatile Interface Adaptor (VIA) chip, as the BBC Micro's port. The electronic design looks good and no unusual chips have been used, which should make any repairs, however unlikely, reasonably easy.

The main chip, a 6522, is very versatile providing two ports and a variety of timing arranged differently and addresses &FE60 onwards are used for other purposes.

As well as providing a user port the timers in the 6522 VIA can be used in programs to provide accurately timed interrupts or time delays.

A tape of software was provided with the review port, all of which was quite interesting. Especially useful to me was a short routine for decoding radio teletype signals off air and displaying them on-screen.

Another program demonstrated the use of the VIA timers and there is a simple but effective program to monitor the port if it's set up as 8 inputs.

The problem with reviewing a user port is that it either works or it doesn't; it's not like a game or educational software where you can tell how effectively it works.

Much of the value of a user port comes from how it's programmed, and of course this is up to you.

That said, overall the port and accompanying software are well worth considering by all intrepid Electron interfacers.

JOE PRITCHARD tries out a unit linking your Electron with a wider world

and interfacing is wide open. You can use it to control motors, monitor sensors such as switches, light sensors, temperature sensors and so on.

Radio amateurs and electronics enthusiasts can use their micros to read morse code and teletype signals – providing they've got a suitable radio set – or even monitor electronic circuits to find out what's wrong with them.

If you're interested in putting your micro to this sort of work, take a look at Mike Cook's Body Building Course in *The Micro User* for some idea of what can be done.

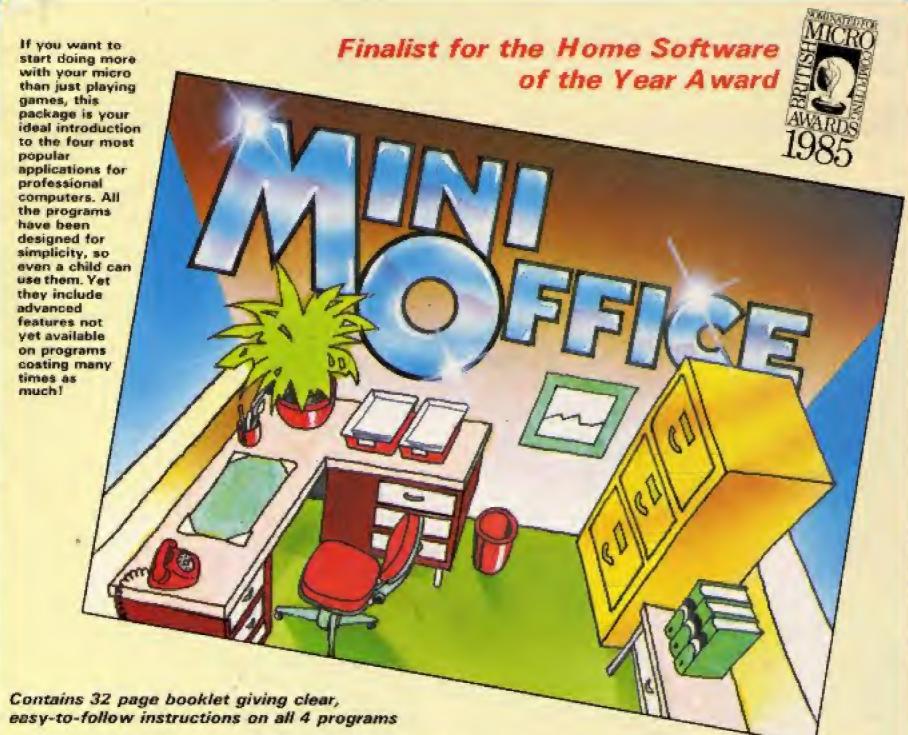
The uses of such a port are only limited by your imagination – and your ability to write the programs to handle the new add-on functions which can be used by machine code programmers to good effect.

Only one of the available ports is used here. And the socket in the cartridge that allows you to connect things to the user port is identical to that on the BBC Micro.

This enables PE user port owners access to at least some of the hardware produced for connection to the BBC Micro.

As already mentioned the PE port uses addresses &FCB0 to &FCBF. The BBC Micro port uses addresses &FE60 to &FE6F, so if you're using programs that were originally written for the BBC Micro you'll need to alter them before they'll work properly on the Electron.

The reason for this is that the Electron's hardware is Product: Project Expansions User Port Price: £29.95 Supplier: Project Expansions, 5 Teal Close, Fareham, Hants PO16 8HG. Tel: 0329 221109



Word Processor: Ideal for writing letters and reports. There is a constant display of both time and word count, plus a words-per-minute display to encourage the budding typist! A unique feature is the double-size text option in both edit and printer mode - perfect for young children and people with poor

Database: You use this for storing information, just like an office filing cabinet. Facts you have entered can be quickly retrieved by just keying in a word or part of a word. They can be sorted, replaced, saved for future use or printed

Spreadsheet: Enables you to use your micro for home accounts or pocket money records. It creates a display of numbers in rows and columns. Continuous updating is possible, and a changed ligure can be instantly reflected throughout the rest of the spreadsheet. Your results can be saved, to be used for future updates, or can be fed into its associated program . .

Graphics: Part of the spreadsheet section, it lets you draw bar charts, pie charts and histograms to give a graphic presentation of your statistics. Helps to give life and colour to the dullest figures!

☆ Word Processor ☆ Spreadsheet ☆ Database

☆ Graphics

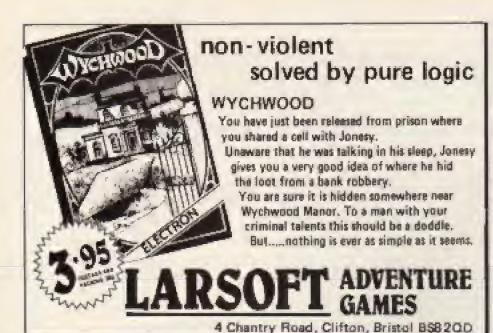
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USER PORT AS FEATURED IN THIS ISSUE

Simply plugs into a Plus t or Hombox plus cartridge slot Gives your Electron 8 bit input/output capability Pin compatible with the BBC user port

Comes complete with booklet describing operation, and example routines

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The guardians of the castle, the vicious Ravenbees have to be avoided or, in some cases, destroyed — but there is only one way to kill them; you must discover how as you venture through the dank passages of the castle. Your quest is not an easy one — only with time, experience and a little luck will you unravel all the mysteries within Ravenskull Castle.

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